CERTIFICATE

The TÜV CERT Certification Body for QM Systems of RWTÜV Systems GmbH

hereby certifies in accordance with TÜV CERT procedure that

ELITEGROUP COMPUTER SYSTEMS CO., LTD.
ECS MANUFACTURING (SHENZHEN) CO., LTD.
ELITE TECHNOLOGY (SHENZHEN) CO., LTD.

2F, No. 240, Sec. 1, Nei Hu Road, Taipei, Taiwan 114
No. 22, Alley 38, Lane 91, Sec. 1, Nei Hu Road, Taipei, Taiwan 114
No. 20 & No. 26, Free Trade Zone, Shatoujiao, Shenzhen City, GuangDong Province, China

has established and applies a quality system for

Design, Manufacturing and Sales of Mainboards, Personal Computers, Notebooks and Peripheral Cards

An audit was performed, Report No. **2.5-1585/2000**

Proof has been furnished that the requirements according to

ISO 9001 : 2000 / EN ISO 9001 : 2000 / JIS Q 9001 : 2000 / ANSI/ASQC Q9001 : 2000

are fulfilled. The certificate is valid until **27 January 2007**

Certificate Registration No. **04100 2000 1325**

The company has been certified since **2000**

TGA-ZM-30-96-00

Essen, 04.03.2004

The TÜV CERT Certification Body for QM Systems of RWTÜV Systems GmbH

ROC, FE1737, RC

ISO14001 CERTIFICATE

Certificate No.: 061-04-E1-0065-R1-L

We hereby certify that

ECS MANUFACTURING (SHANZHEN) CO., LTD.

by reason of its

Environmental Management System

has been awarded this certificate for
compliance with the standard

ISO14001:1996

The Environmental Management System
applies in the following area:
ECS MANUFACTURING (SHANZHEN) CO., LTD.
located at No. 20 & 26 (except 1F, 2F), Free Trade Zone,
Shatuojiao, Shenzhen City, Guangdong Province, P. R. China.
is engaged in manufacturing of Mother Board and Peripheral Card,
and interrelated managerial activities.

Date of issue: 28th Sept. 2004
Date of expiry: 27th Sept. 2007
Signed by:

SHENZHEN SOUTHERN CERTIFICATION CO., LTD.

Preface

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Version 3.0

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

TABLE OF CONTENTS

Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the 945PL-A motherboard. This motherboard is a high performance, enhanced function motherboard designed to support the LGA775 socket Intel Pentium D/Pentium 4/Celeron D processors for high-end business or personal desktop markets.

The motherboard incorporates the 945PL Northbridge (NB) and ICH7 Southbridge (SB) chipsets. The Northbridge supports a Front Side Bus (FSB) frequency of 800/533 MHz using a scalable FSB Vcc_CPU. The momory controller supports DDR2 memory DIMM frequencies of 533/400 MHz. It supports two DDR2 Sockets with up to maximum memory of 2 GB. DDR2 Maximum memory bandwidth of 8.5 GB/s in dual-channel interleaved mode assuming DDR2 533. High resolution graphics via two PCI Express slots, intended for Graphics Interface, are fully compliant to the PCI Express Base Specification revision 1.0a.

The ICH7 Southbridge supports three PCI slots which are PCI 2.3 compliant. In addition, one PCI Express x1 slot is supported, fully compliant to the PCI Express Base Specification, Revision 1.0a. It implements an EHCI compliant interface that provides 480 Mb/s bandwidth for eight USB 2.0 ports. One onboard IDE connector supports 2 IDE devices in Ultra ATA100/66/33 mode. The Southbridge integrates a SATA host controller that is SATA II compliant, supporting four SATA ports with maximum transfer rate up to 3.0 Gb/s each.

This motherboard is equipped with advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, COM1, LPT2, four USB ports, one optional LAN port, one optional 1394 port and audio jacks for microphone, line-in and line out.

Feature

Processor

This motherboard uses an LGA775 type of Pentium D/Pentium 4/Celeron D that carries the following features:

- Accommodates Intel Pentium D/Pentium 4/Celeron D processors
- Supports a system bus (FSB) of 800/533 MHz
- Supports "Hyper-Threading" technology CPU

"Hyper-Threading" technology enables the operating system into thinking it's hooked up to two processors, allowing two threads to be run in parallel, both on separate "logical" processors within the same physical processor.

Chipset

The 945PL Northbridge (NB) and ICH7 Southbridge (SB) chipsets are based on an innovative and scalable architecture with proven reliability and performance.

945PL (NB)

- Supports 32-bit host bus addressing, allowing the CPU to access the entire 2 GB of the memory address space.
- 2 GB/s point-to-point Direct Media Interface (DMI) to ICH7 (1 GB/s)each direction.
- Supports one PCI Express x16 for Graphics Interface, fully compliant to the PCI Express Base Specification revision 1.0a.
- Supports 256-Mb, 512-Mb and 1-Gb DDR2 technologies for x8 and x16 devices

ICH7 (SB)

- Enhanced DMA Controller, interrupt controller, and timer functions
- Compliant with PCI Express Base Specification, Revision 1.0a
- Compliant with PCI 2.3 specificaiton
- Compliant with Serial ATA II specification
- Integrated USB 2.0 Host Controller supporting up to eight USB 2.0 ports
- Integrated LAN controller
- Integrated IDE controller supports Ultra ATA100/66/33

Memory

- DDR2 533/400 DDR SDRAM with Dual-channel DDR2 architecture
- Accommodates two unbuffered DIMMs
- Up to 1 GB per DIMM with maximum memory size up to 2 GB

1394a FireWire(Optional)

- Compliant with single chip host controller for IEEE Std 1394-1995 and IEEE 1394a-2000
- Integrated 400Mb/s 2-port PHY for the PCI BUS
- 3.3V Power Supply with 5V Tolerant Inputs

Onboard LAN(Optional)

This motherboard may support either of the following LAN chipset:

- Supports 100/10 Mb/s N-Way Auto negotiation operation
- Half/Full duplex capability
- Supports Wake-On-LAN (WOL) function and remote wake-up

- Integrate 10/100/1000 transceiver
- Supports PCI v2.3,32-bit,33/66MHz
- Supports fully with IEEE802.3,IEEE802.3u and IEEE802.3ab

Audio (Optional)

This motherboard may support either of the following Audio chipset:

- Compliant with AC'97 V2.3 specification
- Supports 6-channel audio CODEC designed for PC multimedia systems
- Provides three analog line-level stereo input with 5-bit volume control: line-in, CD, AUX
- Meets Microsoft WHQL/WLP 2.0 audio requirements

- 8 channel DAC support 24/20/16-bit PCM format for 7.1 audio solution
- Supports 192K/96K/48K/44.1KHz DAC sample rate
- Power support:Digital:3.3V;Analog:3.5V~5.25V
- Meets Microsoft WHQL/WLP 2.0 audio requirements
- Direct Sound 3D^{TM} compatible
- Dolby^{R} Digital Encoder output for consumer electronic application

Expansion Options

The motherboard comes with the following expansion options:

- Two PCI Express slots for Graphics Interface
- One PCI Express x1 slot
- Three 32-bit PCI v2.3 compliant slots
- One IDE connector that supports two IDE devices
- One floppy disk drive connector
- Four 7-pin SATA connectors

This motherboard supports UltraDMA bus mastering with transfer rates of 100/66 MB/S.

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- Two PS/2 ports for mouse and keyboard
- One serial port
- One parallel port
- Four USB ports
- One 1394 port (optional)
- One LAN port (optional)
- Audio jacks for microphone, line-in and line out

BIOS Firmware

This motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters
- CPU and memory timing

The firmware can also be used to set parameters for different processor clock speeds.

Some hardware specifications and software items are subject to change without prior notice.

Motherboard Components

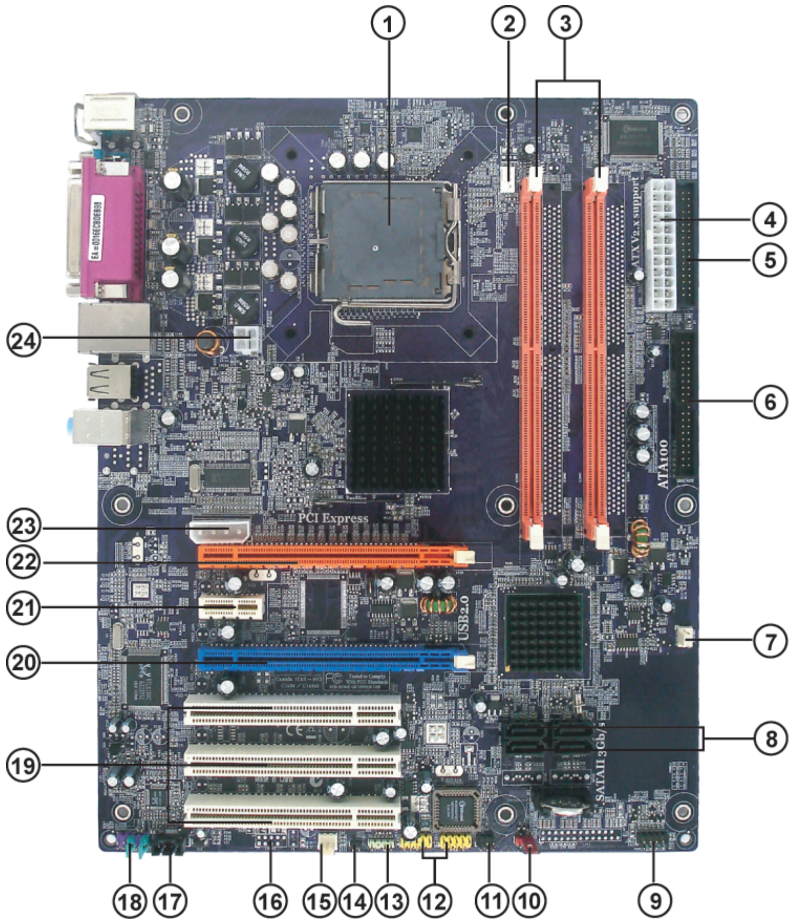


Table of Motherboard Components

LABEL	COMPONEN
1 CPU Socket	LGA775 socket for Pentium D/Pentium 4/ Celeron D processors
2 CPU_FAN1	CPU cooling fan connector
3 DIMM1/3	240-pin DDR2 SDRAM slots
4 ATX1	Standard 24-pin ATX power connector
5 FDD1	Floppy diskette drive connector
6 IDE1	Primary IDE channel
7 SYS_FAN3	System cooling fan connector
8 SATA1~4	Serial ATA connectors
9 PANEL1	Front panel switch/LED header
10 JP1	Clear CMOS jumper
11 IR1	Onboard infrard header
12 USB1~2	Front Panel USB headers
13 SPK1	Speaker header
14 CHS1	Chasis detect header
15 SYS_FAN2	System cooling fan connector
16 1394A2*	IEEE 1394a header
17 CD_IN1	Anolog audio input connector
18 AUDIO1	Front panel audio header
19 PCI1~3	32-bit add-on card slots
20 PCIEX2	PCI Express slot for graphics interface
21 PCI-E1	PCI Express x1 slot
22 PCIEX1	PCI Express slot for graphics interface
23 ATX4P1	Auxliary power connector for graphics card
24 ATX_12V1	4-pin +12V power connector

* stands for optional component

This concludes Chapter 1. The next chapter explains how to install the motherboard.

Memo

Chapter 2
Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the ATX system case. First, some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Secondly, this motherboard supports one or two floppy diskette drives and two enhanced IDE drives. Make sure that your case has sufficient power and space for all drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

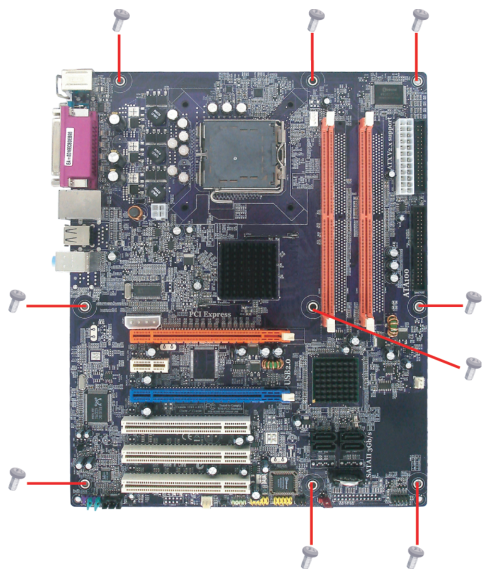
This motherboard carries an ATX form factor of 305 x 244 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



Do not over-tighten the screws as this can stress the motherboard.

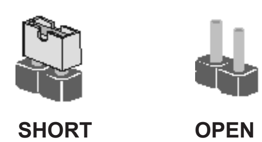
Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

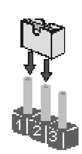
Setting Jumpers

Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.

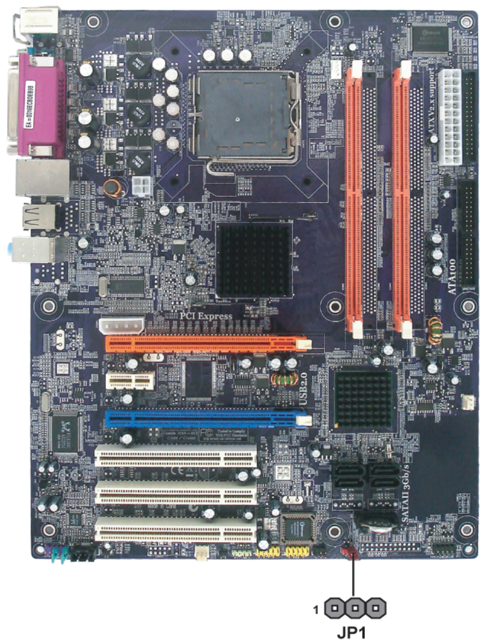


This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT



Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



Jumper Settings

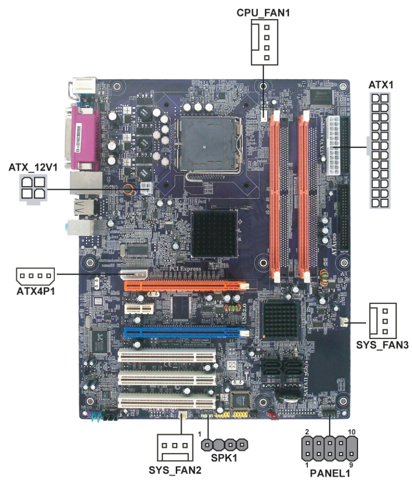
Jumper	Type	Description	Setting (default)	
JP1	3-pin	CLEAR CMOS	1-2: CLEAR CMOS 2-3: NORMAL Before clearing the CMOS, make sure to turn off the system.	JP1 1

To avoid the system unstability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Optimal Defaults" and then "Save Changes and Exit".

Connecting Case Components

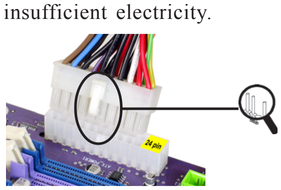
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1. Connect the CPU cooling fan cable to **CPU_FAN1**.
2. Connect the system cooling fan connectors to **SYS_FAN2/3**.
3. Connect the case speaker cable to **SPK1**.
4. Connect the connector for graphics interface to **ATX4P1**.
5. Connect the case switches and indicator LEDs to the **PANEL1**.
6. Connect the standard power supply connector to **ATX1**.
7. Connect the auxiliary case power supply connector to **ATX_12V1**.



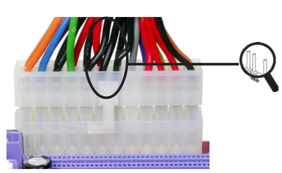
Connecting 20/24-pin power cable

Users please note that the 20-pin and 24-pin power cables can both be connected to the ATX1 connector. With the 20-pin power cable, just align the 20-pin power cable with the pin 1 of the ATX1 connector. However, using 20-pin power cable may cause the system to become unbootable or unstable because of insufficient electricity.



20-pin power cable

With ATX v1.x power supply, users please note that when installing 20-pin power cable, the latche of power cable falls on the left side of the ATX1 connector latch, just as the picture shows.



24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX1 match perfectly.

CPU_FAN1: CPU Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	PWM	CPU FAN control

Users please note that the fan connector supports the CPU cooling fan of 1.1A~2.2A (26.4W max.) at +12V.

SYS_FAN2: System Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

SYS_FAN3: System Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Reserved	Reserved

ATX_12V1: ATX 12V Power Connector

Pin	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

ATX1: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	COM
4	+5V	16	PS_ON
5	Ground	17	COM
6	+5V	18	COM
7	Ground	19	COM
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	COM

ATX4P1: Auxliary Power Connector for Graphics Interface

Pin	Signal Name
1	NC
2	GND
3	GND
4	+12V



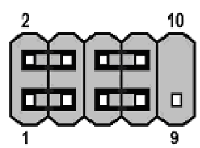
Make sure to connect a 4-pin ATX power cable to ATX4P1; otherwise, the system will be unstable.

SPK1: Internal speaker

Pin	Signal Name
1	VCC
2	Key
3	NC
4	Signal

Front Panel Header

The front panel header (PANEL1) provides a standard set of switch and LED header commonly found on ATX or micro-ATX cases. Refer to the table below for information:



Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED(+)	2	FP PWR/SLP	*MSG LED(+)
3	HD_LED_N	Hard disk LED(-)	4	FP PWR/SLP	*MSG LED(-)
5	RST_SW_N	Reset Switch(-)	6	PWR_SW_P	Power Switch(+)
7	RST_SW_P	Reset Switch(+)	8	PWR_SW_N	Power Switch(-)
9	RSVD	Reserved	10	Key	No pin

***** *MSG LED (dual color or single color)*

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

Installing Hardware

Installing the Processor

Caution: When installing a CPU heatsink and cooling fan make sure that you DO NOT scratch the motherboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the motherboard, you may cause serious damage to the motherboard or its components.

On most motherboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the motherboard and processor socket.

Before installing the Processor

This motherboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change these settings by making changes to jumpers on the motherboard, or changing the settings in the system Setup Utility. We strongly recommend that you do not over-clock processors or other components to run faster than their rated speed.

Warning: Over-clocking components can adversely affect the reliability of the system and introduce errors into your system. Over-clocking can permanently damage the motherboard by generating excess heat in components that are run beyond the rated limits.

This motherboard has an LGA 775 socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

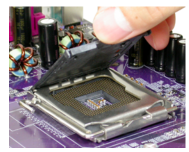
CPU Installation Procedure

The following illustration shows CPU installation components.

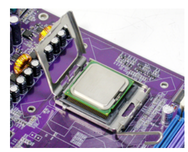


A. Read and follow the instructions shown on the sticker on the CPU cap.

B. Unload the cap
- · Use thumb & forefinger to hold the lifting tab of the cap.
- · Lift the cap up and remove the cap completely from the socket.



C. Open the load plate
- · Use thumb & forefinger to hold the hook of the lever, pushing down and pulling aside unlock it.
- · Lift up the lever.
- · Use thumb to open the load plate. Be careful not to touch the contacts.



D. Install the CPU on the socket
- · Orientate CPU package to the socket. Make sure you match triangle marker to pin 1 location.



E. Close the load plate
- · Slightly push down the load plate onto the tongue side, and hook the lever.
- · CPU is locked completely.

F. Apply thermal grease on top of the CPU.



G. Fasten the cooling fan supporting base onto the CPU socket on the motherboard.

H. Make sure the CPU fan is plugged to the CPU fan connector. Please refer to the CPU cooling fan user's manual for more detail installation procedure.

1. To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 3800 rpm at least. CPU fan and heatsink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.

2. DO NOT remove the CPU cap from the socket before installing a CPU.

3. Return Material Authorization (RMA) requests will be accepted only if the motherboard comes with thecap on the LGA775 socket.

Installing Memory Modules

This motherboard accommodates two memory modules. It can support two 240-pin DDR2 533/400 DDR2 SDRAM. The total memory capacity is 2 GB.

DDR2 SDRAM memory module table

Memory module	Memory Bus
DDR2 400	*200 MHz*
DDR2 533	*266 MHz*

You must install at least one module in any of the two slots. Each module can be installed with 256 MB to 1 GB of memory; total memory capacity is 2 GB.

Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

1 This motherboard supports unbuffered DDR2 SDRAM .
2 Push the latches on each side of the DIMM slot down.
3 Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
4 Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
5 Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.
6 Install any remaining DIMM modules.

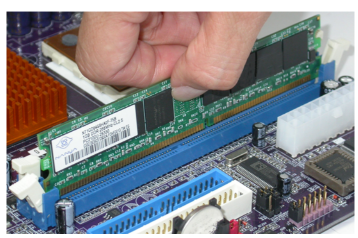


Table A: DDR2 QVL (Qualified Vender List)

The following DDR2 memory modules have been tested and qualified for use with this motherboard.

Type	Size	Vendor	Model Name
DDR2 400	256MB	Hynix	HYMP532U646-E3 AA
		NANYA	NT256T64UH4A0F-5A
DDR2 533	256MB	Kingston	KVR533D2N4
		Ramaxel	RML 1040M28D5F-533
	1GB	KINGSTON	NT5TU64M8AE-37B

Installing a Hard Dish Drive/CD-ROM/SATA Hard Drive

This section describes how to install IDE devices such as a hard disk drive and a CD-ROM drive.

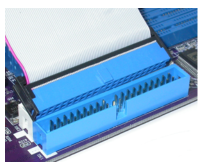
About IDE Devices

Your motherboard has one IDE channel interface. An IDE ribbon cable supporting two IDE devices is bundled with the motherboard.

You must orient the cable connector so that the pin1 (color) edge of the cable correspoinds to the pin 1 of the I/O port connector.

IDE1: IDE Connector

This motherboard supports four high data transfer SATA ports with each runs up to 3.0 Gb/s. To get better system performance, we recommend users connect the CD-ROM to the IDE channel, and set up the hard dives on the SATA ports.





IDE devices enclose jumpers or switches used to set the IDE device as MASTER or SLAVE. Refer to the IDE device user's manual. Installing two IDE devices on one cable, ensure that one device is set to MASTER and the other device is set to SLAVE. The documentation of your IDE device explains how to do this.

About SATA Connectors

Your motherboard features four SATA connectors supporting a total of four drives. SATA , or Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with an SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.



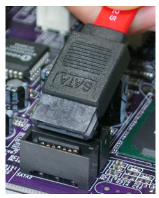
SATA cable **(optional)**

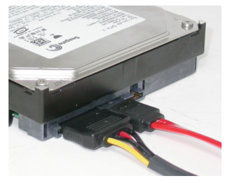


SATA power cable **(optional)**

Refer to the illustration below for proper installation:

1 Attach either cable end to the connector on the motherboard.
2 Attach the other cable end to the SATA hard drive.
3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.





This motherboard does not support the "Hot-Plug" function.

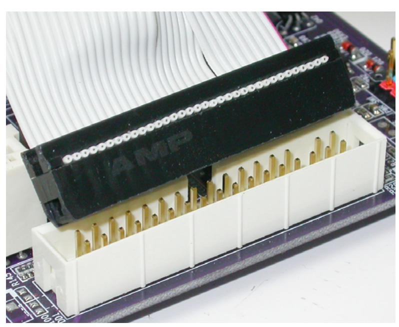
Installing a Floppy Diskette Drive

The motherboard has a floppy diskette drive (FDD1) interface and ships with a diskette drive ribbon cable that supports one or two floppy diskette drives. You can install a 5.25-inch drive and a 3.5-inch drive with various capacities. The floppy diskette drive cable has one type of connector for a 5.25-inch drive and another type of connector for a 3.5-inch drive.

You must orient the cable connector so that the pin 1 (color) edge of the cable corresponds to the pin 1 of the I/O port connector.

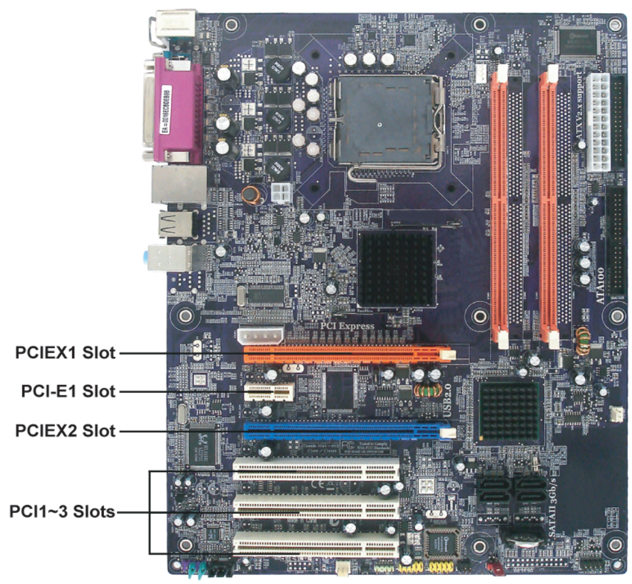
FDD1: Floppy Disk Connector

This connector supports the provided floppy drive ribbon cable. After connecting the single end to the onboard floppy connector, connect the remaining plugs on the other end to the floppy drives correspondingly.



Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



PCIEX1 Slot The PCI Express slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revision 1.0a.

PCIEX2 Slot The PCI Express slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revision 1.0a.

PCI-E1 Slot The PCI Express x1 slots is fully compliant to the PCI Express Base Specification revision 1.0a as well.

PCI 1~3 Slots This motherboard is equipped with three standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slots on this board are PCI v2.3 compliant.

1. *Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.*
2. *PCI-E1 slot will be disabled when PCIEX2 slot is installed.*

Follow these instructions to install add-on cards:

1. Open the chassis and then remove the slot bracket from the case where you will be installing the expansion cards.
2. Install your graphics card in the proper slot by pressing the card firmly into the slot.
3. Drive in the screw to secure the slot bracket of the expanson card.
4. Replace your computer's chassis cover.
5. Power on the computer, if necessary, set up BIOS utility of expansion card from BIOS.
6. Install related driver to complete the installation.



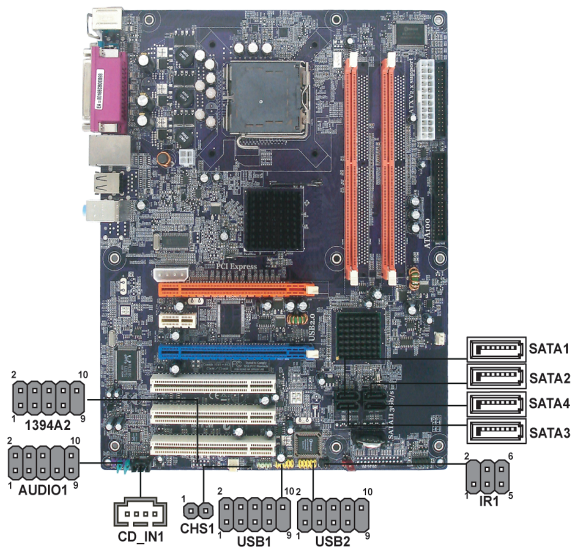
Installing two graphics cards

Notes:

1. The two PCIE x16 slots run in two modes. With only one PCI Express Graphics card, install it onto PCIEX1 slot by default. Having two PCI Express Graphics cards at hand, set them up onto PCIEX1 and PCIEX2 slots simultaneously.
2. The Scalable D.G.E. supports a four-monitor configuration when PCIE X1 slot and PCIE X2 slot are working simultaneously.
3. Please note that the graphics card driver supports Windows 2000/XP only.
4. Make sure to connect a 4-pin ATX power cable to the ATX4P1; otherwise, the system will be unstable.

Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:



AUDIO1: Front Panel Audio header (Optional)

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Function
1	FMICIN_L	Left Front Microphone input signal
2	AUD_GND	Ground used by Analog Audio Circuits
3	FMICIN_R	Right Front Microphone input signal
4	NC	Not connected
5	LOUTR	Right line out
6	NC	Not connected
7	FMIC_JD	Front microphone jack detect
8	Key	No Pin
9	LOUTL	Left line out
10	FOUT_JD	Front line-out jack detect

Pin	Signal Name	Pin	Signal Name
1	PORT 1L	2	AUD_GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	SENSE1_RETURN
7	SENSE_SEND	8	KEY
9	PORT 2L	10	SENSE2_RETURN

CD_IN1: CD Audio Input connector

Pin	Signal Name	Function
1	CD in_L	CD In left channel
2	GND	Ground
3	GND	Ground
4	CD in_R	CD In right channel

USB1/2: Front Panel USB headers

The motherboard has four USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	NC	Not connected

IR1: Infrared port

The mainboard supports an Infrared (IR1) data port. Infrared ports allow the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

Pin	Signal Name	Function
1	Not Assigned	Not assigned
2	Key	No pin
3	+5V	IR Power
4	GND	Ground
5	IRTX	IrDA serial output
6	IRTX	IrDA serial input

SATA1/2/3/4: Serial ATA connectors

These connectors are used to support the new Serial ATA devices for the highest date transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

CHS1: Chassis Intrusion Detect header

Pin 1-2	Function
Short	Case Open
Open	Case Close

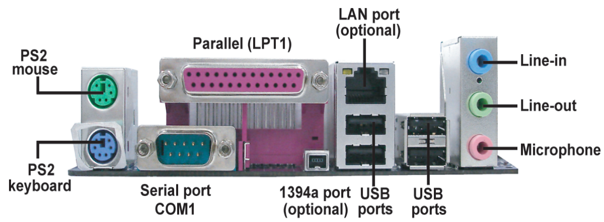
1394A2: IEEE 1394A header(optioanl)

Connect this header to any device with IEEE 1394a interface.

Pin	Signal Name	Pin	Signal Name
1	TPA+	2	TPA-
3	GND	4	GND
5	TPB+	6	TPB-
7	Cable-Power	8	Cable-Power
9	Key Pin	10	GND

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:



PS2 Mouse Use the upper PS/2 port to connect a PS/2 pointing device.

PS2 Keyboard Use the lower PS/2 port to connect a PS/2 keyboard.

Parallel Port (LPT2) Use LPT2 to connect printers or other parallel communications devices.

Serial Port (COM1) Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1/3

1394a Port(optional) Use the 1394a port to connect to any firewire device.

LAN Port (optional) Connect an RJ-45 jack to the LAN port to connect your computer to the Network.

USB Ports Use the USB ports to connect USB devices.

Audio Ports Use the three audio jacks to connect audio devices. The first jack is for stereo line-in signal.The second jack is for stero line-out signal. The third jack is for microphone.

This concludes Chapter 2. The next chapter covers the BIOS.

Memo

Chapter 3
Using BIOS

About the Setup Utility

The computer uses the latest American Megatrends BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL/F1 to enter SETUP

Press the delete key or F1 to access the BIOS Setup Utility.

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

▶ Standard BIOS Features	▶ BIOS Security Features
▶ Boot Configuration Features	Load Optimal Defaults
▶ Advanced BIOS Features	Load Best Performance Settings
▶ Advanced Chipset Features	Save Changes and Exit
▶ Power Mangement Features	Discard Changes and Exit
▶ Hardware Health Configure	

↑↓→←: Move Enter : Select +/-/: Value F10: Save ESC: Exit F1: General Help
F7:Previous Values F8:Fail-Safe Defaults F9: Optimized Defaults

Configure Time and Date. Display System Information.......
v02.58 (C)Copyright 1985-2004, American Mega trends, Inc.

BIOS Navigation Keys

The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
←↑↓→	Scrolls through the items on a menu
+/-/PU/PD	Modifies the selected field's values
F1	Displays a screen that describes all key functions
F8	Loads the Fail-Safe Defaults
F9	Loads an optimized setting for better performance
F10	Saves the current configuration and exits setup
ESC	Exits the current menu

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.
3. Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the system diskette you created in Step 3.
5. Turn off your computer and insert the system diskette in your computer's diskette drive. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the floppy diskette drive first.)
6. At the A:\ prompt, type the Flash Utility program name and the filename of the new bios and then press <Enter>. Example: AMINF340.EXE 040706.ROM
7. When the installation is complete, remove the floppy diskette from the diskette drive and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ►) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ►.

Standard BIOS Features

This option displays basic information about your system.

```
CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
Standard BIOS Features

System Overview                                          Help Item

AMIBIOS                                                  Use [ENTER], [TAB]
Version       : 08.00.12                                 or [SHIFT-TAB] TO
Build Date    : 03/23/05                                 select a field.
ID            : PF500000
                                                         Use [+] or [-] to
Processor                                                configure system Time.
Type          : Genuine Intel (R) CPU 3.00GHz

System Memory
Size          : 256MB

System Time                 [00:04:43]
Saystem Date                [Tue 00/08/2002]

↑↓→← : Move  Enter : Select  +/-/: Value  F10: Save  ESC: Exit  F1: General Help
F7:Previous Values     F8:Fail-Safe Defaults     F9: Optimized Defaults
```

Processor

The item is automatically detected by the system at start up time. The Processor item shows the processor type installed in your computer. This is display-only field. You cannot make changes to this field.

System Memory

The item is automatically detected by the system at start up time. The is display-only field. You cannot make changes to this field.

Time and Date

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

Press <Esc> to return to the main menu setting page.

Boot Configuration Features

This option displays basic information about your system.

```
CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
Boot Configuration Features

Boot Settings Configuration                              Help Item
1st Boot Device             [1st FLOPPY DRIVER]
2nd Boot Device             [CD/DVD:EC-ECS CD-]          Specifies the Boot
3rd Boot Device             [Network:Realtek Bo]         Device Priority
 ▶ Removable Drives         [Press Enter]                sequence from
 ▶ CD/DVD Drives            [Press Enter]                available CD/DVD
                                                         Drives.

Quick Boot                  [Enabled]
Quiet Boot                  [Enabled]
Bootup Num-Lock             [On]

↑↓→← : Move  Enter : Select  +/-/: Value  F10: Save  ESC: Exit  F1: General Help
F7:Previous Values     F8:Fail-Safe Defaults     F9: Optimized Defaults
```

▶Removable Drives (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

```
CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
Removable Drives

Removable Drives                                   Help Item
1st Drive            [1st FLOPPY DRIVE]
                                                   Specifies the boot
                                                   sequence from the
                                                   available devices.

↑↓→← : Move  Enter : Select  +/-/: Value  F10: Save  ESC: Exit  F1: General Help
F7:Previous Values      F8:Fail-Safe Defaults      F9: Optimized Defaults
```

▶CD/DVD Drives (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

```
CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
CD/DVD Drives

CD/DVD Drives                                      Help Item
1st Drive            [CD/DVD]
                                                   Specifies the boot
                                                   sequence from the
                                                   available devices.

↑↓→← : Move  Enter : Select  +/-/: Value  F10: Save  ESC: Exit  F1: General Help
F7:Previous Values      F8:Fail-Safe Defaults      F9: Optimized Defaults
```

Quick Boot (Enabled)

If you enable this item, the system starts up more quickly be elimination some of the power on test routines.

Quiet Boot (Enabled)

If enabled, BIOS will show a full screen logo at boot; if disabled, BIOS will set the initial display mode to BIOS and show the diagnostic POST screen at boot.

Boot Up NumLock (On)

This item defines if the keyboard Num Lock key is active when your system is started.

Press <Esc> to return to the main menu setting page.

Advanced BIOS Features

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
Advanced BIOS Features

Advanced Settings		Help Item
▶ CPU Configuration	[Press Enter]	Configure the Floppy drive(s).
▶ Floppy Configuration	[Press Enter]	
▶ IDE Configuration	[Press Enter]	
▶ SuperIO Configuration	[Press Enter]	
▶ Voltage Adjustment	[Press Enter]	

↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit F1: General Help
F7:Previous Values F8:Fail-Safe Defaults F9: Optimized Defaults

▶ CPU Configuration (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
CPU Configuration

Configuration advanced CPU settings		Help Item
Manufacturer : Intel		Sets the ratio between CPU Core Clock and the FSB Frequency. Note: It's only availble when SpeedStep tech is disabled.
Brand String : Genuine Intel(R) Core(TM)2 CPU		
Frequency : 3.59GHz		
FSB Speed : 533MHz		
Cache L1 : 32KB		
Cache L2 : 4096KB		
Ratio Status :Unlocked (Max: 11, Min: 06)		
Ratio Actual Value: 6		
Ratio CMOS Setting:	[11]	
Max CPUID Value limit:	[Disabled]	
Vanderpool Technology	[Enabled]	
Execute Disable Bit	[Enabled]	
Core Multi-Processing	[Enabled]	
CPU Over-clocking Func.	[Disabled]	
PCIE CLK Synchronize	[Disabled]	

↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit F1: General Help
F7:Previous Values F8:Fail-Safe Defaults F9: Optimized Defaults

Manufacturer/Brand String/Frequency/FSB Speed

These are display-only fields and display the information of current manufacturer, brand of the CPU, frequency and Front Side Bus of the CPU installed in your computer.

Cache L1/L2

These items show the actual CPU interal level 1/2 cache size.

Ratio Status/Ratio Actual Value

These items show the Locked ratio status and the actual ratio of the CPU installed in your system.

Ratio CMOS Setting (12)

This item sets the ratio between CPU Core Clock and the FSB Frequency. Users please not that if a invalid ratio has been entered to this field, BIOS will restore it to previous state.

Max CPUID Value Limit (Disabled)

Use this item to enable or disable the Max CPU ID value limit. When supports Prescott and LGA775 CPUs, enables this item to prevent the system from “rebooting” when trying to install Windows NT4.0.

Vanderpool Technology (Enabled)

This item enables or disables the Vanderpool Technology.When disabled,forces the VT function will close.

Excute Disable Bit (Enabled)

This item is a security feature that helps you protect your CPU and operating system against malicious software executing code. This item is available when CPU supports the feature and it is an optional item.

Core Multi-Processing(Enabled)

Use this item to enable or disable the Core Multi-Processing.

CPU Over-clocking Func. (Disabled)

This item decides the CPU over-clocking function/frequencyinstalled in your system. If the over-clocking fails, please turn offthe system power. And then, hold the PageUp key (similar to theClear CMOS function) and turn on the power, the BIOS willrecover the safe default.

PCIE CLK Synchronize

This item enables or disables you to select PCIE CLK Synchronize or asynchronous.

Press <Esc> to return to Advanced BIOS Features setting page.

▶ Floppy Configuration (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
Floppy Configuration

Floppy Configuration		Help Item
Floppy A	[1.44 MB 3 ½”]	Select the type of floppy drive connected to the system.

↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit F1: General Help
F7:Previous Values F8:Fail-Safe Defaults F9: Optimized Defaults

Floppy A(1.44 MB 3 ½)

Use this item to set up size and capacity of the floppy diskette drive(s) installed in the systems.

Press <Esc> to return to Advanced BIOS Features setting page.

▶ IDE Configuration (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

```
CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
                     IDE Configuration

IDE Configuration                                  Help Item

  ATA/IDE Configuration       [Compatible]         Options
    Legacy IDE Channels       [SATA Pri, PATA Sec]
                                                   Disabled
▶ Primary IDE Master          [Not Detected]       Compatible
▶ Primary IDE Slave           [Not Detected]       Enhanced
▶ Secondary IDE Master        [Not Detected]
▶ Secondary IDE Slave         [ATAPI CDROM]

  Hard Disk Write Protect     [Disabled]
  IDE Detect Time Out (Sec)   [35]
  ATA (PI) 80Pin Cable Detect [Host]

↑↓→← : Move  Enter : Select  +/-/: Value  F10: Save  ESC: Exit  F1: General Help
F7:Previous Values     F8:Fail-Safe Defaults     F9: Optimized Defaults
```

ATA/IDE Configuration (Compatible)

The ATA/IDE option can be configured as “Disabled”, “Compatible (default)” and “Enhanced” in the BIOS configuration. Windows* 98SE and Windows* Me operating systems do not support Enhanced mode IDE/Serial ATA resources for more than four devices. If the ATA/IDE option is set to Enhanced mode, the operating installation will not be able to recognize the drive, and the installation will fail. Before installing 98SE or Me, the ATA/IDE configuration must be changed from Enhanced to Legacy mode.

IDE Chennels (SATA Pri, PATA Sec)

Use this item to set up the primary and secondary sequence of IDE channels and SATA channel. If set ATA/IDE Configuration to Compatible mode and IDE channels to SATA Pri/PATA Sec, users can only plug in SATA devices on SATA1 and SATA2; if set ATA/IDE Configuration to Compatible mode and IDE channels as SATA Sec/PATA Pri, users can only plug in SATA devices on SATA3 and SATA4 or else SATA devices will not be recognized. If set ATA/IDE Configuration to Enhanced mode, then SATA devices can be plugged into any SATA connector.

Primary/Secondary IDE Master/Slave(Not detected/ATAPI CDROM)

Your computer has two IDE channels and each channel can be installed with one or two devices (Master and Slave). In addition, this motherboard supports four SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the IDE channel.

If any IDE device is detected in any one of the above items, press <Enter> to reveal the following information.

CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
Primary IDE Master

Primary IDE Master		Help Item
Device	: Not Detected	Select the type of device conneted to the system.
Type	[Auto]	
LBA/Large Mode	[Auto]	
Block (Multi-Sector Transfer	[Auto]	
PIO Mode	[Auto]	
DMA Mode	[Auto]	
S.M.A.R.T.	[Auto]	
32Bit Data Transfer	[Enabled]	

↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit F1: General help
F7:Previous Values F8:Best Performance Settings F9: Optimized Defaults

CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
Secondary IDE Slave

Secondary IDE Slave		Help Item
Device	: ATAPI CDROM	Select the type of device conneted to the system.
Vendor	: DVD-ROM DDV1632	
LBA Mode	: Supported	
PIO Mode	: 4	
Async DMA	: MultiWord DMA-2	
Ultra DMA	: Ultra DMA-2	
Type	[Auto]	
PIO Mode	[Auto]	
DMA Mode	[Auto]	

↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit F1: General help
F7:Previous Values F8:Best Performance Settings F9: Optimized Defaults

Hard Disk Write Protect (Disabled)

Use this item to enable or disable hard disk write protection.

IDE Detect Time Out (35)

This item allows you to set time out for IDE detection.

ATA (PI) 80Pin Cable Detect (Host)

This item allows you to select the mechanism for detecting 80Pin ATA(PI) Cable.

Press <Esc> to return to the advanced BIOS setup page.

▶ SuperIO Configuration (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

```
CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
SuperIO Configuration

OnBoard Floppy Controller        [Enabled]       Help Item
Serial Port1 Address             [3F8/IRQ4]
Serial Port2 Address             [2F8/IRQ3]      Allows BIOS to
  Serial Port2 Mode              [NORMAL]        Enable or Disable
Parallel Port Address            [378]           Floppy Controller
  Parallel Port Mode             [ECP]
    ECP Mode DMA Channel         [DMA3]
  Parallel Port IRQ              [IRQ7]

↑↓→← : Move  Enter : Select  +/-/: Value  F10: Save  ESC: Exit  F1: General Help
F7:Previous Values     F8:Fail-Safe Defaults     F9: Optimized Defaults
```

Onboard Floppy Controller (Enabled)

Use this item to enable or disable the onboard floppy disk drive interface. The bios will automatically detect the existence of floppy.

Serial Port1/2 Address (3F8/IRQ4/2F8/IRQ3)

Use this item to enable or disable the onboard COM1/2 serial port, and to assign a port address.

Serial Port2 Mode (Normal)

If Serial Port 2 Address is not disabled, it allows you to set the Serial Port 2 Mode.

Parallel Port Address (378)

Use this item to enable or disable the onboard Parallel port, and to assign a port address.

Parallel Port Mode(ECP)

Use this item to select the parallel port mode.

ECP Mode DMA Channel (DMA3)

This item assigns a DMA channel to the parallel port. The options are 0, 1, and 3.

Parallel Port IRQ (IRQ7)

Use this item to assign IRQ to the parallel port.

Press <Esc> to return to Advanced BIOS Features setting page.

▶ Voltage Adjustment

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

Voltage Adjustment

		Help Item
CPU Vcore Voltage	[NORMAL]	Options
DIMM Voltage	[NORMAL]	Auto
NB Vcore Voltage	[NORMAL]	1.6000V
		1.5875V
		1.5750V
		1.5625V
		1.5375V
		1.5250V
		1.5125V
		1.5000V
		1.4875V
		1.4750V
		1.4625V
		1.4500V
		1.4375V
		1.4250V

↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit F1: General Help
F7:Previous Values F8:Fail-Safe Defaults F9: Optimized Defaults

CPU Vcore Voltage (NORMAL)

This item allows you to adjust the processor's core voltage to give it a small boost.

DIMM Voltage (NORMAL)

This item is used to adjust the voltage of the DIMM.

NB Vcore Voltage (NORMAL)

This item is used to adjust the voltage of the Northbridge.

Press <Esc> to return to Advanced BIOS Features setting

Advanced Chipset Features

This option displays basic information about your system.

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

Advanced Chipset Features

Advanced Chipset Settings		Help Item
DRAM Frequency	[Auto]	Options
Configure DRAM Timing by SPD	[Enabled]	Auto
Boots Graphic Adapter Priori	[PEG/PCI]	400 MHz
Auto Detect PCI Clk	[Enabled]	533 MHz
Spread Spectrum	[Enabled]	667 MHz
Onboard Device		
Legacy USB Support	[Enabled]	
Audio Controller	[Enabled]	
Onboard LAN Device	[Enabled]	
Onboard LAN Boot ROM	[Enabled]	
1394 Device	[Enabled]	

↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit F1: General Help
F7:Previous Values F8:Fail-Safe Defaults F9: Optimized Defaults

DRAM Frequency (Auto)

This item determines frequency of DRAM memory.

Configure DRAM Timing by SPD (Enabled)

When this item is set to enable, the DDR timing is configured using SPD. SPD (Serial Presence Detect) is located on the memory modules, BIOS reads information coded in SPD during system boot up.

Boots Graphic Adapter Priori (PEG/PCI)

This item allows you to choose which graphics controller to use as the primary boot device.

Auto Detect PCI Clk (Enabled)

This item allows you to enable or disable the function of detecting the PCI clock automatically.

Spread Spectrum (Enabled)

If you enable this function, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

Legacy USB Support (Enabled)

This item allows you to enable or disable Legacy USB support.

AUDIO Controller (Enabled)

Enables or disables the Audio controller.

Onboard LAN Device (Enabled)

Enables or disables the onboard LAN.

Onboard LAN Boot ROM (Enabled)

This item enables or disables the function of LAN Boot ROM.

1394 Device(Optional)(Enabled)

Use this item to enable or disable the onboard 1394 function.

Press <Esc> to return to the main menu setting page.

Power Management Features

This option displays basic information about your system.

```
CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
Power Management Features

Suspend mode                    [S3(STR)]     | Help Item
Power Management/APM            [Enabled]     |
Repost Video on S3 Resume       [No]          | Select the ACPI
PS/2 Keyboard Wakeup            [Disabled]    | state used for
PS/2 Mouse Wakeup               [Disabled]    | System Suspend
Suspend Time Out                [Disabled]    |
Power Button Mode               [On/Off]      |
Restore on AC Power Loss        [Power off]   |
Resume On Ring                  [Disabled]    |
Resume On PME#                  [Enabled]     |
USB Device Wakeup From S3       [Disabled]    |
Resume On RTC Alarm             [Disabled]    |

↑↓→← : Move  Enter : Select  +/-/: Value  F10: Save  ESC: Exit  F1: General Help
F7:Previous Values      F8:Fail-Safe Defaults      F9: Optimized Defaults
```

Suspend mode (S3)(STR)

Use this item to define how your system suspends. In the default, S3 (STR), the suspend mode is suspend to RAM, i.e., the system shuts down with the exception of a refresh current to the system memory.If you select S1(POS), the suspend mode is equivalent to a software power down.

Power Management/APM (Enabled)

Use this item to enable or disable a power management scheme. If you enable power management, you can use the items below to set the power management operation. Only APM is supported.

Repost Video on S3 Resume (No)

If STR mode or Auto mode is selected, this item allows you to enable or disable this function.

PS/2 Keyboard/Mouse Wakeup (Disabled)

These items enable or disable you to allow keyboard or mouse activity to awaken the system from power saving mode.

Suspend Time Out (Disabled)

This sets the timeout for Suspend mode in minutes. If the time selected passes without any system activity, the computer will enter power-saving Suspend mode.

Power Button Mode (On/Off)

This item lets you install a software power down controlled by the normal power button on your system.

Restore on AC Power Loss (Power off)

This item defines how the system will act after AC power loss during system operation. When you set to Off, it will keep the system in Off state until the power button is pressed.

Resume On Ring (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem. You must use an ATX power supply in order to use this feature.

Resume On PME# (Enabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the PCI Modem or PCI LAN card. You must use an ATX power supply in order to use this feature. Use this item to do wake-up action if inserting the PCI card.

USB Device Wakeup From S3 (Disabled)

This item allows you to enable/disable the USB device Wakeup function from S3 mode.

Resume On RTC Alarm (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

Press <Esc> to return to the main menu setting page.

Hardware Health Features

This option displays basic information about your system.

```
CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
                     Hardware Health Features

Case Open Warning              [Disabled]    | Help Item
Shutdown Temperature           [Disabled]    |
                                             | Options
Hardware Health Configure                    |
                                             | Disable
SMART FAN Control              [Disabled]    | Enable
System Temperation             :29°C/84°F
CPU Temperature                :32°C/89°F
CPU Fan Speed                  :3515 RPM
SYSFAN2 Speed                  :N/A
CPU Vcore                      :1.298 V
NB Vcore                       :1.467 V
+12V                           :12.316 V
+5V                            :5.107 V
+5VSB                          :3.193 V
VBAT                           :3.225 V

↑↓→←: Move  Enter : Select  +/-/: Value  F10: Save  ESC: Exit  F1: General Help
  F7:Previous Values   F8:Fail-Safe Defaults   F9: Optimized Defaults
```

Case Open Warning (Disabled)

This item enables or disables the warning if the case is opened up, and the item below indicates the current ststus of the case.

Shutdown Temperature (Disabled)

This item enables you to set the maximum temperature the system can reach before powering down.

SMART FAN Control (Disabled)

This item allows you to enable/disable the control of the system fan speed by changing the fan voltage.

System Component Characteristics

These fields provide you with information about the systems current operating status. You cannot make changes to these fields.

- System Temperature
- CPU Temperature
- CPU Fan Speed
- SYSFAN2 Speed
- CPU Vcore
- NB Vcore
- +12V
- +5V
- +5VSB
- VBAT

Press <Esc> to return to the main menu setting page.

BIOS Security Features

This option displays basic information about your system.

```
CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.
BIOS Security Features

Security Settings                                          Help Item

Supervisor Password       : Not Installed                  Install or Change
User Password             : Not Installed                  the password.

Change Supervisor Password            [Press Enter]
Change User Password                  [Press Enter]

Boot Sector Virus Protection          [Disabled]

↑↓→← : Move  Enter : Select  +/-/: Value  F10: Save  ESC: Exit  F1: General Help
F7:Previous Values   F8:Fail-Safe Defaults   F9: Optimized Defaults
```

Supervisor Password/User Password [Not Installed[

This item indicates whether a supervisor password/user password has been set. If the password has benn installed, *Installed* displays. If not, *Not Installed* displays.

Change Supervisor Password/Change User Password [Press Enter[

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

Boot Sector Virus Protection [Disabled

If set to Disabled, when anything attempts to access the boot sector or hard disk partition table, there will be no warning message to appear.

Press <Esc> to return to the main menu setting page.

Load Optimal Defaults

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility. Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. When your hardware does not support the “Optimized Defaults”, fatal system errors or instability may occur. If you only want to install setup defaults for a specific option, select and display that option, and then press <F7>.

Users please remain the factory BIOS default setting of “Load Optimized Defaults” when install Operation System onto your system.

Load Performance Defaults

If you select this item and press Enter a dialog box will appear. If you select [OK], and then Enter, the Setup Utility loads a set of performance default values. These default settings are quite demanding and your system might not function properly if you are using slower CPU, memory, or other low-performance components.

Warning: To load Performance settings may make your system become unstable or unbootable. When loading the Performance Defaults fails, users can choose “either” step to return the motherboard to its defaults BIOS:

1. Power on the system and press “Insert” key. The system will bypass the previous BIOS setting and automatically reload the default BIOS. (This procedure is BIOS setup only!)
2. Apply to the jumper setting reference onboard and proceed with the “Clear CMOS” to recover the default BIOS setting. Please refer to Chapter 2, page 9, to complete the clear CMOS action. (This procedure requires opening the chasis!)

Save Changes and Exit

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, press <OK> to save and exit, or press <Cancel> to return to the main menu:

Discard Changes and Exit

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, press <OK> to discard changes and exit, or press <Cancel> to return to the main menu.

If you have made settings that you do not want to save, use the “Discard Changes and Exit” item and press <OK> to discard any changes you have made.

Chapter 4
Using the Motherboard Software

About the Software CD-ROM

The support software CD-ROM that is included in the motherboard package contains all thedrivers and utility programs needed to properly run the bundled products. Below you can finda brief description of each software program, and the location for your motherboardversion. More information on some programs is available in a README file, located in thesame directory as the software. Before installing any software, always inspect the folder forfiles named README.TXT, INSTALL.TXT, or something similar. These files may con-tain important information that is not included in this manual.

Never try to install all software from folder that is not specified for use with your motherboard.

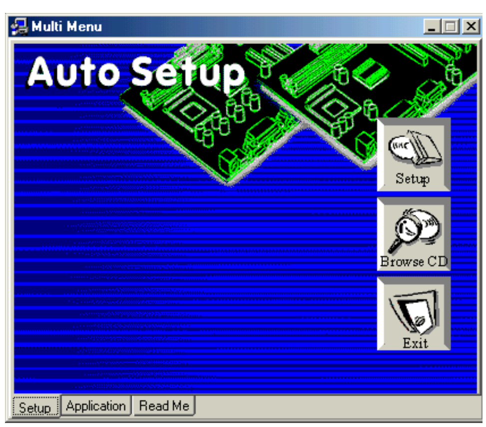
The notice of Intel HD audio installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center "before" installing HD audio driver bundled in the Driver CD. Please log on to http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliesto for more information.

Auto-installing under Windows 2000/XP

The Auto-install CD-ROM makes it easy for you to install the drivers and software for your motherboard.

If the Auto-install CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.

The support software CD-ROM disc loads automatically under Windows 2000/XP. When you insert the CD-ROM disc in the CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.



If the opening screen does not appear; double-click the file "setup.exe" in the root directory.

Setup Tab

Setup	Click the **Setup** button to run the software installation program. Select from the menu which software you want to install.
Browse CD	The **Browse CD** button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD. Before installing the software from Windows Explorer, look for a file named README.TXT, INSTALL.TXT or something similar. This file may contain important information to help you install the software correctly. Some software is installed in separate folders for different operating systems. In install the software, execute a file named SETUP.EXE or INSTALL.EXE by double-clicking the file and then following the instructions on the screen.
Exit	The **EXIT** button closes the Auto Setup window.

Application Tab

Lists the software utilities that are available on the CD.

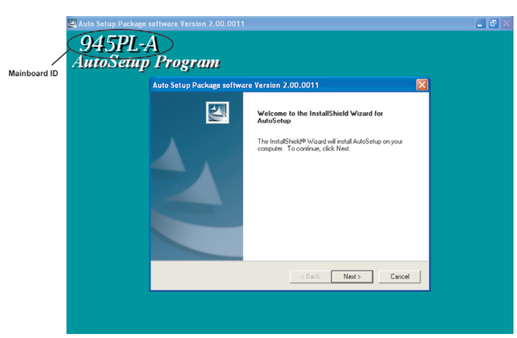
Read Me Tab

Displays the path for all software and drivers available on the CD.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

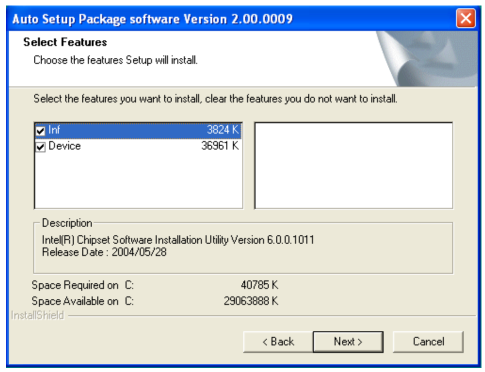
1. *Click **Setup.** The installation program begins:*



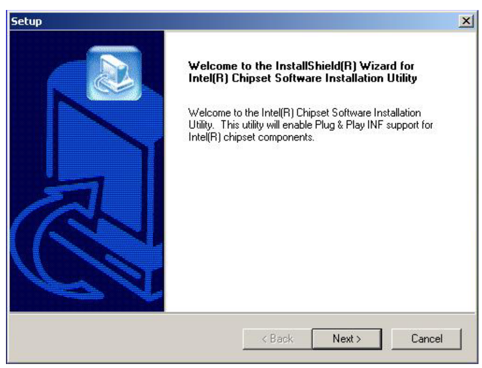
The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

The motherboard identification is located in the upper left-hand corner.

2. *Click **Next.** The following screen appears:*



3. *Check the box next to the items you want to install. The default options are recommended.*
4. *Click **Next** run the Installation Wizard. An item installation screen appears:*



5. *Follow the instructions on the screen to install the items.*

Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

Manual Installation

Insert the CD in the CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

These software(s) are subject to change at anytime without prior notice. Please refer to the support CD for available software.

This concludes Chapter 4.

Caractéristiques

Processeur

La carte mère utilise un type LGA775 d' Pentium D/Pentium 4/Celeron D comportant les caractéristiques suivantes :

- Peut recevoir les processeurs Intel Pentium D/Pentium 4/Celeron D
- Support un bus système (FSB) de 800/533 MHz
- Supporte le CPU de technologie "Hyper-Threading"

La technologie "Hyper-Threading" permet au système d'exploitation de penser qu'il est connecté à deux processeurs, permettant d'exécuter deux threads en parallèle, à la fois sur des processeurs 'logiques' dans le même processeur physique.

Chipset

Le chipset 945PL Northbridge (NB) Chipset et ICH7 Southbridge (SB) se base sur une architecture innovante et évolutive avec des performances et une fiabilité éprouvées.

945PL (NB)

- Prend en charge l'adressage de bus hôte 32 bits, permettant au CPU d'accéder à l'espace de 2 Go complet d'adresse mémoire.
- Interface Direct Media (DMI) point à point de 2 Go/s vers chaque direction ICH7 (1 Go/s).
- Prend en charge un PCI Express x16 pour Interface Graphique, entièrement conforme à la Spécification de Base PCI Express révision 1.0a.
- Prend en charge les technologies DDR2 256-Mb, 512-Mb et 1-Gb pour x8 et x16 périphériques
- Prend en charge jusqu'à quatre DIMM sans mémoire tampon

ICH7 (SB)

- Fonctions de Contrôleur DMA Amélioré, de contrôleur d'interruption, et de minuterie
- Conforme aux spécifications de base PCI Express, Révision 1.0a
- Conforme aux spécifications PCI 2.3.
- Conforme aux spécifications ATA II Série
- Contrôleur d'Hôte USB 2.0 intégré prenant en charge jusqu'à huit ports USB 2.0
- Contrôleur LAN intégré
- Contrôleur IDE intégré prenant en charge Ultra ATA100/66/33

Mémoire

- SDRAM DDR 533/400 DDR2 avec architecture DDR2 en double canal
- Reçoit deux DIMM sans tampon
- Jusqu'à 1 Go par DIMM avec une taille de mémoire maximum de 2 Go

1394a FireWire (Optionnel)

- Conforme au contrôleur d'hôte à puce simple pour IEEE 1394-1995 et IEEE1394a-2000
- PHY à 2 ports intégré de 400 Mbits pour le Bus PCI
- Alimentation 3,3V avec entrées tolérantes de 5V.

LAN interne (optionnel)

Cette carte mère prend en charge les chipsets LAN suivants :

- Fonctionnement en auto-négociation N-way 100/10 Mb/s
- Prend en charge le fonctionnement en half/full duplex
- Prise en charge de Réveil par LAN et réveil distant

- Emetteur-récepteur intégré 10/100/1000
- PCI v2.3, 32 bits, 33/66 MHz
- Entièrement conforme à IEEE 802.3, IEEE802.3u et IEEE802.3ab

Audio (Optionnel)

Cette carte mère prend en charge les chipsets Audio suivants:

- Conforme aux spécifications AC'97 2.3
- Prend en charge le CODEC audio 6 canaux destiné aux systèmes multimédia PC
- Offre trois entrées stéréo de niveau de ligne analogique avec contrôle de volume 5 bits: Ligne d'entrée, CD, AUX
- Conforme aux exigences audio de Microsoft WHQL/WLP 2.0

- 8 canaux de format PCM 24/20/16-bits de support DAC pour solution audio 7.1
- Supporte la vitesse d'échantillonnage DAC de 192K/96K/48K/44,1KHz
- Support d'alimentation : Numérique : 3,3V; Analogique : 3,5V~5,25V
- Conforme aux exigences audio de Microsoft WHQL/WLP 2.0
- Compatible Direct Sound 3D™
- Sortie d'encodeur Dolby® Digital pour application électronique consommateur

Options d'extension

La carte mère comporte les options d'extension suivantes :

- Deux logements PCI Express pour interface graphique
- Un logement PCI Express x1
- Trois emplacements PCI v2.3 32bits
- Un connecteur IDE prenant en charge jusqu'à deux périphériques IDE
- Une interface lecteur de disquettes
- Quatre connecteurs SATA à 7 broches

Cette carte mère prend en charge la maîtrise de bus Ultra DMA avec des vitesses de transfert de 100/66 Mo/s.

E/S intégrées

La carte mère comporte un ensemble complet de connecteurs et de ports E/S :

- Deux ports PS/2 pour souris et clavier
- Un port série
- Un port parallèle
- Quatre ports USB
- Un port 1394 (optionnel)
- Un port LAN (optionnel)
- Prises audio pour microphone, ligne d'entrée et ligne de sortie

Microprogramme BIOS

La carte mère utilise AMI BIOS qui permet à l'utilisateur de configurer bon nombre de fonctions du système, dont :

- Gestion d'alimentation
- Alertes de réveil
- Paramètres de CPU
- Synchronisation de CPU et de mémoire

Le micro-programme peut également être utilisé pour définir les paramètres pour différentes vitesses d'horloge de processeur.

Certaines spécifications matérielles et certains éléments logiciels sont susceptibles de modification sans préavis.

Features

Prozessor

Das Mainboard verwendet einen LGA775 Typ Pentium D/Pentium 4/Celeron D mit den folgenden Eigenschaften:

- Nimmt Intel Pentium D/Pentium 4/Celeron D Prozessoren auf
- Unterstützt einen Systembus (FSB) mit 800/533 MHz.
- Unterstützt CPU mit “Hyper-Threading”-Technologie.

“Hyper-Threading”-Technologie läßt das Betriebssystem glauben, es sei an zwei Prozessoren angeschlossen, was zwei parallele Threads auf separaten ‘logischen’ Prozessoren im selben physischen Prozessor erlaubt.

Chipsatz

Die 945PL Northbridge (NB) und ICH7 Southbridge (SB) Chipsätze basieren auf einer innovativen und skalierbaren Architektur mit bewiesener Zuverlässigkeit und Leistung.

945PL (NB)

- Unterstützung einer 32-Bit Host-Bus-Adressierung, welche der CPU einen Zugriff zum kompletten Speicherplatz von 2 GB erlaubt.
- 2 GB/s Punkt-zu-Punkt Direct Media Interface (DMI) zu ICH7 (1 GB/s) in jede Richtung.
- Unterstützung von PCI Express x16 für die Grafikschnittstelle, gemäß den PCI Express-Base-Spezifikationen Revision 1.0a.
- Unterstützung von 256-Mb, 512-Mb und 1-Gb DDR2-Technologien für x8 und x16 Zubehör.
- Unterstützung von bis zu vier ungepufferten DIMM.

ICH7 (SB)

- Verbesserter DMA-Kontroller, Unterbrechungskontroller und Zeitfunktionen.
- Gemäß PCI Express-Base-Spezifikationen, Revision1.0a.
- Gemäß Spezifikationen von PCI 2.3.
- Gemäß Serial ATA II Spezifikationen.
- Integrierter USB 2.0 Host-Kontroller, welcher bis zu acht USB 2.0 Steckvorrichtungen unterstützt.
- Integrierter LAN-Kontroller.
- Integrierter IDE-Kontroller, welcher Ultra ATA100/66/33 unterstützt.

Arbeitsspeicher

- DDR2 533/400 DDR SDRAM mit Dualkanal DDR2-Architektur
- Es können zwei ungepufferte DIMMs aufgenommen werden.
- Bis zu 1 GB pro DIMM mit maximaler Speicherkapazität von bis zu 2 GB.

1394a FireWire (Optional)

- Kompatibel mit Singlechip-Host Controller für IEEE 1394-1995 und IEEE1394a-2000
- Integrierter 400 Mbit 2-Port PHY für den PCI-Bus
- 3.3V Stromversorgung mit 5V-toleranten Eingängen

Onboard LAN (optional)

Dieses Mainboard kann einen der folgenden LAN-Chipsätze unterstützen:

- 100/10 Mb/s N-Way Auto-Negotiation-Betrieb
- Unterstützt Halb-/Vollduplex
- Unterstützung für Wake-on-LAN und Remote Wake-up

- Integrierter 10/100/1000 Transceiver
- PCI v2.3, 32-Bit, 33/66MHz
- Vollständige Entsprechung zu IEEE 802.3, IEEE802.3u und IEEE802.3ab

Audio (optional)

Dieses Mainboard kann einen der folgenden Audio-Chipsätze unterstützen:

- Entspricht AC'97 v2.3 CODEC
- Unterstützt 6-Kanal Audio CODEC, entwickelt für Multimedia PC-Systeme
- Stellt drei analoge Line-Level Stereoeingänge mit 5-bit Lautstärkeregelung zur Verfügung: Line-in, CD, AUX
- Entspricht den Microsoft WHQL/WLP 2.0 Audio-Anforderungen

- 8-Kanal DAC Unterstützung 24/20/16-Bit PCM-Format für 7.1 Audio
- Unterstützt 192K/96K/48K/44.1KHz DAC Abtastrate
- Netzteilunterstützung: Digital: 3,3V; Analog: 3,5V~5,25V
- Entspricht den Anforderungen von Microsoft WHQL/WLP 2.0
- Kompatibel mit Direct Sound 3D™
- Dolby® Digital Encoderausgang für Endverbrauchergeräte

Erweiterungsmöglichkeiten

Das Mainboard ist mit den folgenden Erweiterungsmöglichkeiten ausgestattet:

- Zwei PCI Express-Slots für Grafik-Interface
- Ein PCI Express x1 Slot
- Drei 32-bit PCI v2.3-Steckplätze
- IDE-Stecker, die bis zu zwei IDE-Geräte unterstützen
- Ein Diskettenlaufwerkanschluss
- Vier 7-Pin SATA Anschlüsse

Dieses Mainboard unterstützt Ultra DMA Bus-Mastering mit Transferraten von 100/66MB/s.

Integrierte I/O-Schnittstellen

Das Mainboard verfügt über einen kompletten Satz von I/O-Schnittstellen und Anschlüssen:

- Zwei PS/2-Anschlüsse für Maus und Tastatur
- Eine serielle Schnittstelle
- Eine parallele Schnittstelle
- Vier USB Schnittstelle
- Ein 1394-Anschluss (optional)
- Ein LAN-Anschluss (optional)
- Audiobuchsen für Mikrofon, Line-In und Line-Out

BIOS-Firmware

Das Mainboard therboard verwendet AMI BIOS, das es Benutzern gestattet, viele System-funktionen inkl. der Folgenden zu konfigurieren:

- Energieverwaltung
- Aufweckfunktionen
- CPU-Parameter
- CPU- und Arbeitsspeicherfrequenz

Die Firmware kann auch zur Einstellung von Parametern für verschiedene Prozessortaktge-schwindigkeiten verwendet werden.

Manche Hardwarespezifikationen und Softwareelemente können ohne Ankündigung geändert werden.

Caratteristiche

Processore

La scheda madre utilizza un tipo LGA775 di processore Pentium D/Pentium 4/Celeron D che offre le seguenti caratteristiche:

- Compatibile con processori Intel Pentium D/Pentium 4/Celeron D
- Supporta un bus di sistema (FSB) fino a 800/533 Mhz
- Supporta CPU con tecnologia "Hyper Threading"

La tecnologia "Hyper-Threading" induce il sistema operativo a pensare di essere collegato a due processori, questo permette di eseguire due thread in parallelo, ambedue su processori "logicamente" separati all'interno dello stesso processore.

Chipset

I chipset Intel 945PL Northbridge (NB) e ICH7 Southbridge (SB) sono basati su una architettura innovativa e scalabile dalle prestazioni e affidabilità garantite.

945PL (NB)

- Supporta un indirizzamento host bus da 32 bit, consentendo alla CPU di accedere a tutti i 2 GB della memoria di sistema.
- Interfaccia DMI (Direct Media Interface) point-to-point da 2 GB/s in ciascuna direzione (1 GB/s) ICH7.
- Supporta un PCI Express x16 per interfaccia grafica, completamente compatibile con le specifiche di revisione 1.0a di PCI Express Base.
- Supporta tecnologie DDR2 da 256-Mb, 512-Mb e 1-Gb per dispositivi x8 e x16
- Supporta sino a quattro DIMM unbuffered

ICH7 (SB)

- Controller DMA migliorato, controller interrupt e funzioni di timer
- Compatibile con le Specifiche di base del PCI Express, Revision1.0a
- Conforme alle specifiche PCI 2.3.
- Conforme alle specifiche Serial ATA II
- Host Controller USB 2.0 integratoin grado di supporare sino a 8 porte USB 2.0
- Controller LAN integrato
- Integrato con controller IDE supporta Ultra ATA100/66/33

Memoria

- Supporto di SDRAM DDR 533/400 DDR2 con architettura DDR2 Dual Channel
- Alloggia 2 DIMM unbuffered
- Dimensione massima della DIMM pari ad 1 GB per un ammontare massimo di 2 GB di memoria

FireWire 1394a (Opzionale)

- Conforme a host controller Single Chip per IEEE1394-1995 e IEEE1394a-2000
- PHY a 2 porte da 400 Mbit integrato per il bus PCI
- Alimentazione a 3,3 V con ingressi dotati di tolleranza di 5 V

LAN integrata (opzionale)

La scheda madre offre supporto per uno dei seguenti chipset LAN:

- Operazioni di auto-negoziazione N-way 100/10 Mb/s
- Supporto di funzionalità half/full duplex
- Supporto di funzionalità Wake-on-LAN e riattivazione remota

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- Transceiver 10/100/1000 integrato
- PCI v2.3, a 32 bit, 33/66 MHz
- Piena compatibilità con IEEE 802.3, IEEE802.3u e IEEE802.3ab

Audio (Opzionale)

La scheda madre offre supporto per uno dei seguenti chipset audio.

- Conforme alle specifiche AC’97 2.3
- Supporto di CODEC audio a 6 canali per sistemi PC multimediali
- Tre ingressi analogici stereo lineari con controllo volume a 5 bit: Line-In, CD, AUX
- Conforme ai requisiti audio di WHQL e WLP 2.0 di Microsoft

- 8 canali per formato PCM a 24/20/16 bit con supporto DAC per soluzioni audio 7.1
- Supporto di velocità di campionamento DAC a 192K/96K/48K/44,1 KHz
- Supporto alimentazione: Digitale: 3,3 V; Analogico: 3,5 V ~ 5,25 V
- Megfelel a Microsoft WHQL/WLP 2.0 audio követelményeine
- Compatibile con Direct Sound 3D™
- Uscita Dolby® Digital Encorder per apparecchiature elettroniche di largo consumo

Opzioni di espansione

La scheda madre è dotata delle seguenti opzioni di espansione

- Due slot PCI Express per interfaccia grafica
- Uno slot PCI Express x1
- Tre slot PCI v2.3 a 32 bit
- Uno connettor IDE per il supporto di fino a due dispositivi IDE
- Un’interfaccia per unità disco floppy
- Quattro connettori SATA a 7 pin.

La scheda madre supporta la funzionalità di bus mastering Ultra DMA con velocità di trasferimento di100/66 MB/s.

I/O integrati

La scheda madre è dotata di un set completo di connettori e porte I/O:

- Due porte PS/2 per mouse e tastiera
- Una porta seriale
- Una porta parallela
- Quattro porte USB
- Una porta 1394 (opzionale)
- Una porta LAN (opzionale)
- Prese jack audio per microfono, line-in e line-out

Firmware BIOS

Questa scheda madre adotto un BIOS AMI che permette agli utenti di configurare le caratteristiche principali del sistema, inclusi:

- Gestione dell’alimentazione
- Allarmi di attivazione
- Parametri CPU
- Sincronizzazione di CPU e memoria

Il firmware può anche essere usato per impostare i parametri per diverse velocità di clock.

Alcune specifiche hardware e software potrebbero essere soggette a cambiamenti senza preavviso.

Características

Procesador

La placa principal usa un tipo LGA775 de Pentium D/Pentium 4/Celeron D que lleva las sigtes. características:

- Acomoda procesadores Intel Pentium D/Pentium 4/Celeron D
- Soporta un sistema de bus (FSB) de 1066/800/533 MHz
- Soporta CPU de tecnología "Hyper-Threading"

La tecnología "Hyper-Threading" habilita el sistema operativo para que piense como si estuviera conectado a dos procesadores, que permite dos hilos a correr en paralelo, ambos en procesadores "lógicos" dentro del mismo procesador físico.

Chipset

Los chipsets Northbridge 945PL (NB) y Southbridge ICH7 (SB) están basados en una arquitectura innovadora y escalable con fiabilidad y rendimiento comprobados.

945PL (NB)

- Soporta la dirección de bus anfitrión 32-bit, que permite la CPU acceder a todos los 2 GB del espacio de dirección de memoria.
- Interfaz Direct Media (DMI) punto a punto de 2 GB/s a ICH7 (1 GB/s) cada dirección.
- Soporta un PCI Express x16 para la Interfaz de Gráficas, completamente conforme a la Especificación Base PCI Express revisión 1.0a.
- Soporta las tecnologías 256-Mb, 512-Mb y 1-Gb DDR2 para los dispositivos x8 y x16.
- Soporta hasta cuatro DIMM sin buffer.

ICH7 (SB)

- Controlador DMA reforzado, controlador de interrupción y funciones de cornometraje.
- Conforme con la Especificación Base PCI Express, Revisión1.0a.
- Conforme con la espec. PCI 2.3.
- Conforme con la espec. Serial ATA II
- Controlador Anfitrión USB 2.0 Integrado soporta hasta ocho puertos USB 2.0.
- Controlador LAN integrado .
- Controlador IDE integrado soporta Ultra ATA100/66/33.

Memoria

- DDR SDRAM DDR2 533/400 con arquitectura DDR de canal dual
- Acomoda dos DIMMS sin buffer
- Hasta 1 GB por DIMM con el tamaño de memoria máximo hasta 2 GB

1394a FireWire (opcional)

- Conformidad con un controlador anfitrión de un solo chip para IEEE 1394-1995 y IEEE1394a-2000
- 400 Mbit 2-Port PHY integrado para el Bus PCI
- Suministro de 3.3V con Entradas Tolerantes de 5V

LAN Abordo (opcional)

Esta placa principal puede soportar uno de los sigtes. chipset LAN:

- Operación de autonegociación N-way de 100/10 Mb/s
- Soporta capacidad duplex medio/completo
- Soporta la función Wake-On-LAN y despertar remoto

- Transreceptor 10/100/1000 integrado
- PCI v2.3, 32-bit, 33/66 MHz
- Conformidad total con IEEE 802.3, IEEE802.3u y IEEE802.3ab

Audio (opcional)

Esta placa principal puede soportar uno de los sigtes. chipset Audio.

- Conformidad con las especificaciones AC'97 2.3
- Soporta CODEC de audio de 6 canales diseñaods para los sistemas multimedia
- Provee tres entradas en estéreo a nivel de línea análogicas con control de volumen de 5-bit: LIne-in, CD, AUX
- Satisface los requisitos de audio de Microsoft WHQL/WLP 2.0

- 8 canales de formato PCM de 24/20/16-bit de soporte DAC para la solución de audio 7.1
- Soporta índice de muestreo DAC 192K/96K/48K/44.1KHz
- Soporte de suministro: Digital: 3.3V; Analógico: 3.V~5.25V
- Satisface los requisitos de audio de Microsoft WHQL/WLP 2.0
- Compatible con Direct Sound 3D™
- Salida de Decodificador Digital Dolby® para la aplicación de los electrónicos de consumo

Opciones de expansión

La placa base viene con las opciones siguientes de expansión:

- Dos ranuras PCI Express para la Interfaz de Gráficas
- Una ranura PCI Express x1
- Dos ranuras conforme con 32-bit PCI v2.3
- Una conector IDE que soporta hasta dos dispositivos IDE
- Una interfaz para unidad de disquete
- Cuatro conectores 7-pin SATA

Esta placa principal soporta Ultra DMA bus mastering con índices de transferencia de 100/66MB/s.

I/O integrado

La placa base tiene un conjunto completo de puertos I/O y conectores:

- Dos puertos PS/2 para ratón y de teclado
- Un puerto serie
- Un puerto paralelo
- Cuatro puertos USB
- Un puerto 1394 (opcional)
- Un puerto LAN (opcional)
- Clavijas de audio para micrófono, entrada y salida de línea

Firmware de BIOS

La placa base utiliza AMI BIOS que permite a los usuarios configurar muchas funciones de sistema, incluyendo las siguientes:

- Administración de energía
- Alarmas de encendido
- Parámetros CPU
- Temporización de memoria y CPU

El firmware también puede utilizarse para ajustar los parámetros para diversas velocidades del reloj del procesador.

Algunas especificaciones de hardware y elementos de software están sujetos a cambios sin previo aviso.

Características

Processador

Esta motherboard usa um tipo de Pentium D/Pentium 4/Celeron D LGA775 que possui as seguintes características:

- Acomoda processadores Intel Pentium D/Pentium 4/Celeron D
- Suporta um bus sistema (FSB) de 800/533 MHz
- Suporta CPU de tecnologia "Hyper-Threading"

A tecnologia "Hyper-Threading" permite que o sistema operativo "pense" que está ligado a dois processadores, permitindo que sejam executados dois threads em paralelo, ambos em processadores "lógicos" separados dentro do mesmo processador físico.

Chipset

Os chipsets da 945PL Northbridge (NB) e ICH7 Southbridge (SB) são baseados em uma arquitetura inovativa e escalável com performance e confiabilidade comprovada.

945PL (NB)

- Suporta um endereçamento no host bus de 32-bit, permitindo que o CPU aceda completamente aos 2 GB de espaço de endereçamento da memória.
- Interface Media Directo (DMI) ponto-para-ponto com 2 GB/seg. para ICH7 (1 GB/seg.) cada direcção.
- Suporta um PCI Express x16 Interface de Gráficos, que cumpre inteiramente com a revisão de Especificação de Base 1.0a. do PCI Express.
- Suporta 256-Mb, 512-Mb e tecnologias 1-Gb DDR2 para aparelhos x8 e x16
- Suporta até quatro DIMMs sem buffers

ICH7 (SB)

- Controlador DMA Melhorado, controlador de interruptor, e funções de temporizador
- Cumpre com a Especificação de Base do PCI Express, Revisão 1.0a
- Em conformidade com a especificação PCI 2.3
- Compatível com Série ATA II
- Controlador Host 2.0 USB integrado suportando até oito portas USB 2.0
- Controlador LAN integrado
- Controlador IDE integrado suporta Ultra ATA100/66/33

Memória

- DDR2 533/400 DDR SDRAM com arquitectura DDR2 bicanal
- Acomoda duas DIMMs sem buffers
- Até 1 GB por DIMM com tamanho de memória máxima de até 2 GB

1394a FireWire (opcional)

- Compatível com controlador host de chip único para IEEE 1394-1995 e IEEE1394a-2000
- PHY integrado de 2 portas de 400 Mbits para o PCI Bus
- Fonte de alimentação de 3.3V com Entradas Tolerantes de 5V

Onboard LAN (opcional)

Esta motherboard poderá suportar qualquer um dos seguintes conjuntos de chips LAN:

- Funcionamento de auto-negociação 100/10 Mb/s N-way
- Suporta capacidade de duplex pela metade/ou na totalidade
- Suporte Wake-on-LAN e wake-up remoto

- Transmissor 10/100/1000 integrado
- PCI v2.3, de 32 bits, 33/66 MHz
- Totalmente compatível com IEEE 802.3, IEEE802.3u e IEEE802.3ab

Áudio(opcional)

Esta motherboard poderá suportar qualquer dos seguintes conjuntos de chips Áudio.

- Cumpre com as especificações AC’97 2.3
- Suporta CODEC áudio com 6 canais concebido para sistemas multimédia para PC
- Fornece três entradas estéreo nível de linha analógicas com controlo de volume de 5 bits: LIne-in, CD, AUX
- Cumpre com os requisitos áudio WHQL/WLP 2.0 da Microsoft audio

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- Formato 24/20/16-bit PCM com suporte DAC de 8 canais para solução áudio 7.1
- Suporta taxa de amostragem DAC 192K/96K/48K/44.1KHz DAC
- Suporte de potência: Digital: 3.3V; Analógica: 3.5V~ 5.25V
- Cumpre com os requisitos áudio WHQL/WLP 2.0 da Microsoft
- Compatível com Direct Sound 3D™
- Saída de codificador Dolby® Digital para aplicação electrónica de consumidor

Opções de Expansão

A motherboard é fornecida com as seguintes opções de expansão:

- Duas ranhuras PCI Express slots para Interface de Gráficos
- One ranhura x1 PCI Express
- Três ranhuras compatíveis com PCI v2.3 de 32 bits
- Uma conector IDE que suportam até dois dispositivos IDE
- Uma interface para unidade de disquete
- Quatro conectores SATA de 7 pinos

Esta motherboard suporta mastering bus Ultra DMA com taxas de transferência de 100/66MB/s.

I/O Integrado

A motherboard possui um conjunto completo de portas I/O e conectores:

- Duas portas PS/2 para o rato e o teclado
- Uma porta de série
- Uma porta paralela
- Quatro portas USB
- Uma porta 1394 (opcional)
- Uma porta LAN (opcional)
- Fichas áudio para microfone, entrada de linha e saída de linha

Firmware do BIOS

A motherboard usa o AMI BIOS que permite aos usuários configurar vários recusos do sistema, como:

- Gerenciamento de energia
- Alarmes de reativação
- Parâmetros da CPU
- Sincronização da CPU e memória

O firmware também pode ser usado para definir os parâmetros de diferentes velocidades de clock do processador.

Alguns itens de software e especificação de hardware estão sujeitos a alterações sem prévio aviso.

機能

プロセッサ

本マザーボードはLGA775タイプの Pentium D/Pentium 4/Celeron Dに対応したもので、その特徴は次の通り:

- Intel Pentium D/Pentium 4/Celeron D プロセッサが搭載可能
- 800/533MHzのシステムバス(FSB)をサポート
- "ハイパースレッド技術対応のCPUを取り付け可能

ハイパースレッド(HT) 技術というのは、オペレーションシステムに2つのプロセッサが存在すると認識させることで、実際には2つのスレッドを1つのプロセッサで同時に執行させ、平行利用を可能とする技術です。

チップセット

945PL Northbridge (NB)とICH7 Southbridge (SB)チップセットは、実証された信頼性と性能を持つ革新的で拡張性のあるアーキテクチャに基づいています。

945PL (NB)

- 32ビットホストバスアドレシング機能に対応し、2 GBのメモリアドレス空間すべてへのCPUのアクセスを可能に
- 2 GB/秒 point-to-point Direct Media Interface (DMI)で ICH7とのデータやり取りを1 GB/秒の転送率で実現
- グラフィックインターフェース用PCI Express x16 スロットを提供し、PCI Express Base Specification revision 1.0aに完全対応
- x8またはx16のデバイスの256-Mbや512-Mb、1-Gb のDDR2技術に対応
- 最大4つの非バッファーDIMMをサポート

ICH7(SB)

- 強化型DMAコントローラと、割り込みコントローラ、タイマー機能を提供
- PCI Express Base Specification 1.0a版に完全対応
- PCI 2.3仕様に準拠しています
- シリアルATA II 仕様に準拠し
- 統合型USB 2.0ホストコントローラで、最大8つまでのUSB 2.0 ポートを対応可能
- 統合型LANコントローラ
- 統合型IDEコントローラで、Ultra ATA100/66/33サポート可能

メモリ

- DDR2 533/400 DDR SDRAM に対応し、デュアルチャネル DDR2 構成を実現
- 2つまでの非バッファーDIMMを搭載可能
- 各DIMMスロットに1 GBまで、合計2 GBまでの装着をサポート

1394a Fire Wire(オプション)

- "IEEE 1394-1995 and IEEE1394a-2000"基準のシングル・チップ・ホスト・コントローラに対応
- PCI バスの400 Mbit 2-Port PHY を内蔵
- 3.3Vの電源サプライを採用し、許容入力5V

オンボードLAN（オプション）

当マザーボードは次のLANチップセットのいずれかを搭載しております：

- 100/10 Mb/s Nウェイ自動折衝動作
- 半/全二重の機能をサポート
- Wake-on-LAN とremote wake-upの機能をサポート

- 10/100/1000 トランシーバーを搭載済み
- 32ビット33/66 MHzモードのPCI v2.3仕様
- IEEE 802.3、IEEE802.3u および IEEE802.3abに完全対応

オーディオ(オプション)

当マザーボードは次のオーディオチップセットのいずれかをサポートします：

- AC'97 V2.3 規格に準拠
- PCマルチメディアシステムの6チャネルオーディオCODECをサポート
- 5ビット音声コントロール可能のアナログラインレベルのステレオ入力が3つ：ラインイン、CD、およびAUX
- Microsoft WHQL/WLP 2.0 オーディオ要求に適合

- 8チャネルのDACで、7.1オーディオソリューションの24/20/16-bit PCM形式をサポート
- 192K/96K/48K/44.1KHz DAC サンプリング率をサポート
- 電源サポート：3.3V(デジタル方式の場合)、3.5V~5.25V(アナログ方式の場合)
- Microsoft WHQL/WLP 2.0 オーディオ基準に準拠
- Direct Sound 3D™ に対応
- Dolby® Digital Encoder出力で、家庭用電子製品との接続を可能に

拡張オプション

本マザーボードでは、次の拡張機能が利用できます。

- グラフィックインターフェース用のPCI Express スロットが2つ
- PCI Express x1 スロットが1つ
- 32ビットPCI v2.3 互換性スロットが3つ
- IDEヘッダーが1つ (2つのIDEデバイスの接続が可能)
- フロッピーディスク･ドライブ･インターフェイス が1つ
- 7ピンSATAコネクタ が4つ

このマザーボードは、100/66 MB/秒の転送速度でのUltra DMAバスマスタリングをサポートします。

統合I/O

マザーボードには、次のI/Oポートやコネクタを揃えています。

- マウスとキーボード用のPS/2ポート が2つ
- シリアルポート が1つ
- パラレルポート が1つ
- USBポート が4つ
- 1394ポート が1つ(オプション)
- LANポート が1つ(オプション)
- マイク、ラインイン、ラインアウト用のオーディオジャック

BIOSファームウェア

本マザーボードはAMI BIOSを採用し、次の機能を含めた多様なシステム構成を行えます。

- 電源管理
- ウェークアップアラーム
- CPUパラメータ
- CPUおよびメモリのタイミング

さらに、所定のパラメータを設定することによって、プロセッサのクロック速度を変更することもできます。

一部のハードウェア仕様とソフトウェアアイテムは、予告なしに変更することがあります。

특징

프로세서

본 마더보드는 Pentium D/Pentium 4/Celeron D 의 LGA775 타입을 사용하였으며 다음과 같은 특성을 지닌다.

- Intel Pentium D/Pentium 4/Celeron D 프로세서 사용
- 800/533 MHz시스템 버스(FSB) 지원
- ”Hyper-Threading”기술 CPU 지원

”Hyper-Threading”기술은 운영체제를 두 개의 프로세서에 연결한 것처럼 두개의 트래드를 패러럴로 실행하여 같은 물리적 프로세서 안에서 각기 다른 논리적 프로세서를 실행할 수 있게 한다.

칩셋

945PL Northbridge (NB) 와 ICH7 Southbridge (SB) 칩셋은혁 신적이고 범위성을 지닌 아키텍쳐를 바탕으로 인정된 신뢰성과 성능을 지닌다.

945PL (NB)

- 32 비트 호스트 버스 어드레싱 지원으로, CPU 가 총 2 GB 메모리 어드레스 공간에 액세스할 수 있다.
- ICH7 (1 GB/s).에 각 방향으로 2 GB/s point-to-point Direct Media Interface (DMI)
- 그래픽 인터페이스를 위해 1 개의 PCI Express x16 지원, PCI Express Base 1.0a 사양 완전 부합.
- x8 및 x16 장치를 위해 256-Mb, 512-Mb, 1-Gb DDR2 기술 지원.
- 최고 4 개의 unbuffered DIMM 지원

ICH7 (SB)

- 보강 DMA 컨트롤러, 인터럽트 컨트롤러, 및 타이머 기능
- PCI Express Base 1.0a 사양 부합
- PCI 2.3 사양 호환.
- 시리얼 ATA II 사양 호환
- 최대 8 개의 USB 2.0 포트를 지원하는 통합 USB 2.0 호스트 컨트롤러
- 통합 LAN 컨트롤러
- 통합 IDE 컨트롤러로 Ultra ATA100/66/33 지원

메모리

- 듀얼 채널 DDR2 아키텍처를 지닌 DDR2 533/400 DDR SDRAM
- 2 개의 unbuffered DIMM 사용
- DIMM 당 최대 1 GB, 최대 메모리 2 GB

1394a 파이어 와이어(선택 사항)

- IEEE 1394-1995 및 IEEE1394a-2000 용 싱글 칩 호스트 컨트롤러 호환
- PCI 버스 용 통합 400 Mbit 2 포트 PHY
- 3.3V 전원 공급 장치 (5V 허용오차)

보드 내장 LAN (선택 사항)

본 마더보드는 다음과 같은 LAN 칩셋을 지원합니다:

- 100/10 Mb/s N-way 자동 감지
- Half/full 듀플렉스 지원.
- Wake-on-LAN 및 원격 wake-up 지원

- 통합 10/100/1000 트랜시버
- PCI v2.3, 32 비트, 33/66 MHz
- IEEE 802.3, IEEE802.3u 및 IEEE802.3ab 규격 부합

오디오(선택 사항)

본 마더보드는 다음과 같은 오디오 칩셋을 지원합니다.

- AC'97 2.3 사양 부합
- PC 멀티미디어 시스템을 위해 디자인 된 6 채널 오디오 코덱 지원
- 5 비트 볼륨 컨트롤의 아날로그 라인 레벨 스테레오 입력 3개 : Line-in, CD, AUX
- 마이크로소프트 WHQL/WLP 2.0 오디오 요구 조건 부합

- 8 채널 DAC, 7.1 오디오 솔루션을 위해 24/20/16 비트 PCM 포맷 지원
- 192K/96K/48K/44.1KHz DAC 샘플 속도 지원
- 전원 지원: 디지털: 3.3V; 아날로그: 3.5V~5.25V
- Microsoft WHQL/WLP 2.0 오디오 요구 조건에 부합
- Direct Sound 3D™ 호환
- 일반 전자 제품을 위한 돌비® 디지털 인코더 출력

확장 옵션

이 메인보드는 다음과 같은 확장 옵션이 있다

- 그래픽 인터페이스 용 PCI Express 슬롯 2 개
- PCI Express 1 개 x 슬롯 1 개
- 32 비트 PCI v2.3 호환 슬롯 3 개
- 최대 2개의 IDE 장치를 지원하는 IDE 커넥터 1 개
- 플로피 디스크 드라이브 인터페이스 1 개
- 7 핀 SATA 커넥터 4개

본 마더보드는 전송 속도 100/66MB/s 로 Ultra DMA 버스 마스터링을 지원한다.

통합 I/O

이 메인보드에는 풀 세트의 I/O 포트와 커넥터가 있다

- 마우스와 키보드용 PS/2 포트 2 개
- 시리얼 포트1개
- 패러럴 포트 1 개
- USB 포트 4 개
- 1394 포트 1 개 (선택 사항)
- LAN 포트 1 개 (선택 사항)
- 마이크, 라인 입력 및 라인 출력용 오디오 잭

BIOS 펌웨어

본 메인보드는 AMI BIOS 를 사용하여 사용자는 다음과 같은 시스템 기능을 구성할 수 있다

- 전원 관리
- Wake-up 알람
- CPU 파라미터
- CPU 및 메모리 타이밍

펌웨어는 다른 프로세서의 클럭 속도를 설정하는 데도 사용될 수 있다

하드웨어 사양 및 소프트웨어 아이템은 사전 통보없이 변경될 수 있습니다

功能

處理器

本主機板採用LGA775型的 Pentium D/Pentium 4/Celeron D ，具有如下特徵：

- 可搭配Intel Pentium D/Pentium 4/Celeron D 處理器
- 支援高達 800/533MHz之前端匯流排(FSB)
- 支援使用超執行緒(Hyper-Threading)技術之CPU

利用“超執行緒(HT)”技術，可使作業系統在相當於裝上了兩具處理器的狀態下運作：利用一個”實體”處理器模擬出兩個獨立的”邏輯”處理器，同時執行兩個工作緒。

晶片組

945PL北橋(NB)及ICH7南橋(SB)晶片組在研發設計上採用了創新且具擴充性之架構，具備優良的可靠性及性能。

945PL (NB)

- 支援32位元主控匯流排定址，使得CPU能夠運用整個2 GB的記憶位址空間
- 提供對ICH7的2 GB/秒點對點Direct Media Interface (DMI)，雙向1 GB/秒
- 具有一個繪圖卡用之PCI Express x16 介面，完全符合PCI Express Base Specification 1.0a版
- 支援x8及x16之256-Mb、512-Mb、及1-Gb DDR2技術
- 支援高達4個非緩衝式雙直列記憶體模組

ICH7 (SB)

- 增強型DMA控制器、中斷控制器、及計時功能
- 符合PCI Express Base Specification 1.0a版
- 符合PCI 2.3規格
- 符合SATA II 規格
- 內建式USB 2.0主控，可支援8個USB 2.0埠
- 內建式區域網路控制器
- 整合式IDE控制器，支援Ultra ATA100/66/33

記憶體

- 支援DDR2 533/400 DDR SDRAM，提供雙通道DDR2 架構
- 可安裝2個非緩衝式雙直列記憶體模組
- 各雙直列記憶體模組可具有1GB記憶體，共可支援高達2GB的記憶體容量

1394a Fire Wire (選購)

- 相容於”IEEE 1394-1995 and IEEE1394a-2000”規格之單晶主控制器
- 內建PCI匯流排之 400 Mbit 雙埠 PHY
- 採3.3V 電源供應，5V之容限電壓輸入

內建區域網路 (選購)

本主機板搭載有如下其中一種LAN晶片組：

- 100/10 Mb/s N路自動協商運作
- 支援半/全雙工功能
- 支援區域網路喚醒(Wake-On-LAN)及遠端喚醒功能

- 整合有10/100/1000 收發器
- PCI v2.3規格，32位元 33/66 MHz
- 完全相容於IEEE 802.3、IEEE802.3u 及IEEE802.3ab

音效(選購)

本主機板支援以下其中一種音訊晶片組：

- 相容於AC'97 V2.3 規格
- 支援為個人電腦多媒體系統設計的6聲道音訊編解碼器
- 提供具有5位元音量控制功能的3種類比線級立體音效輸入：Lin-in、CD、及AUX
- 符合Microsoft WHQL/WLP 2.0 音訊規格

- 配備8通道之DAC，可支援 7.1音訊解決方案之24/20/16-bit PCM 格式
- 支援 192K/96K/48K/44.1KHz DAC 取樣率
- 電源支援： 3.3V(數位)、3.5V~5.25V(類比)
- 符合Microsoft WHQL/WLP 2.0 音訊規格
- Direct Sound 3D™ 相容
- 配備杜比® 數位編碼器輸出端子，可用來連接家用電子產品

擴充選項

本主機板包括下列擴充選項：

- 2個繪圖介面用之PCI Express插槽
- 1個PCI Express x1 插槽
- 3個32位元PCIv2.3插槽
- 1 個 IDE 接頭，支援 2個 IDE 裝置
- 1 個軟碟機介面
- 4個7針SATA插頭

本主機板支援傳輸率100/66 MB秒下的Ultra DMA 匯流排主控功能。

整合 I/O

主機板隨附齊全的 I/O 連接埠及連接頭：

- 2 個 PS/2 埠，供滑鼠與鍵盤使用
- 1 個串列埠
- 1 個平行埠
- 4 個USB埠
- 1 個1394埠(選購)
- 1 個區域網路埠(選購)
- 麥克風、Line級輸入及Line級輸出音效接頭

BIOS 韌體

本主機板使用AMI BIOS，使用者可以組態設定許多系統功能，包括如下：

- 電源管理
- 喚醒警鈴
- CPU參數
- CPU及記憶體的時脈定時

此外，也可藉由參數的設定，調整處理器的時脈速度。

部份硬體規格和軟體內容可能會在未經通知的情況下更動，敬請見諒。

功能

处理器

此主板使用 LGA775 型 Pentium D/Pentium 4/Celeron D 处理器，具有以下特点：

- 支持 Intel Pentium D/Pentium 4/Celeron D 处理器
- 支持 800/533 MHz 系统总线 (FSB)
- 支持“多线程”技术 CPU

“多线程”技术可以让操作系统认为自己连接了两个处理器，允许两个线程并行运行，每个线程位于同一处理器中的单独“逻辑”处理器中。

芯片组

945PL北桥 (NB) 和 ICH7 南桥 (SB) 芯片组是基于一种新型的、可扩展的架构，能提供已经证明的可靠性和高性能。

945PL (NB)

- 支持 32 位主机总线寻址，允许 CPU 访问 2 GB 的完整内存地址空间。
- 每个方向 2 GB/s 点到点直接媒体接口 (DMI) 到 ICH7 (1 GB/s)。
- 支持 1 个 PCI Express x16 用于图形接口，完全符合 PCI Express Base 规格 1.0a。
- 支持用于 x8 和 x16 设备的 256-Mb、512-Mb 和 1-Gb DDR2 技术
- 最多支持 4 个非缓冲 DIMM

ICH7 (SB)

- 增强 DMA 控制器、中断控制器和定时器功能
- 符合 PCI Express Base 规格 1.0a
- 符合 PCI 2.3 规格
- 符合串行 ATA II 规格
- 集成 USB 2.0 主控器，最多支持 8 个 USB 2.0 端口
- 集成 LAN 控制器
- 集成 IDE 控制器，支持 Ultra ATA100/66/33

内存

- DDR2 533/400 DDR SDRAM，双通道 DDR2 架构
- 支持 2 个非缓冲 DIMM
- 每个插槽支持 1 GB，总共最大可支持 2 GB

1394a 火线（可选）

- 符合用于 IEEE1394-1995 和 IEEE1394a-2000 的单芯片 PCI 主机控制器标准
- 集成用于 PCI 总线的 400 Mbit 2 端口 PHY
- 3.3V 电源，带 5V 容错输入

Onboard LAN（可选）

此主板支持以下任何一种 LAN 芯片组：

- 100/10 Mb/s N 路自侦测运行
- 支持半双工/全双工工作
- 支持 LAN 唤醒 (WOL) 功能和远程唤醒功能

- 集成 10/100/1000 收发器
- PCI v2.3，32-位，33/66-MHz
- 完全支持 IEEE 802.3、IEEE802.3u 和 IEEE802.3ab

音频(可选)

此主板支持以下任何一种音频芯片组：

- 兼容 AC'97 v2.3 规格
- 支持为PC多媒体系统设计的 6 声道音频编解码器
- 提供 3 路带 5 位音量控制的模拟线路电平立体声输入：线入、CD 和 AUX
- 符合 Microsoft WHQL/WLP 2.0 音频要求

- 8 通道 DAC，支持 24/20/16 位 PCM 格式用于 7.1 音频解决方案
- 支持 192K/96K/48K/44.1KHz DAC 采样速率
- 电源支持： 数字量：3.3V；模拟量：3.5V~5.25V
- 符合 Microsoft WHQL/WLP 2.0 音频要求
- 符合 Direct Sound 3D™ 规格
- 用于消费类电子应用的杜比® 数字编码器

扩展选项

此主板提供如下扩展选项：

- 2 个用于图形接口的 PCI Express插槽
- 1 个 PCI Express x1 插槽
- 3 个 32 位 PCI 扩展插槽
- 1 个 IDE 接口，可支持 2 个 IDE 设备
- 1 个软驱接口
- 4 个 7-pin SATA 接口

主板支持 Ultra DMA 总线控制，传输速率可达 100/66 MB/sec。

集成 I/O

此主板具有完整的 I/O 端口和插孔：

- 2 个用于连接鼠标和键盘的 PS/2 端口
- 1 个串口
- 1 个并口
- 4 个 USB 端口
- 1 个 1394 端口（可选）
- 1 个 LAN 端口（可选）
- 麦克风、线入和线出声音插孔

BIOS

此主板使用 AMI BIOS，可以让用户自己配置以下系统功能：

- 电源管理
- 唤醒报警
- CPU 参数
- CPU 和记忆定时

还可用于设置不同处理器时钟速度的参数。

某些硬件规格和软件项目若有更改恕不另行通知。

Характеристики

Процессор

Материнская плата построена для процессоров типа LGA775 Pentium D/Pentium 4/ Celeron D и обладает следующими свойствами:

- Размещает процессоры Intel Pentium D/Pentium 4/Celeron D
- Поддерживает системные шины (FSB) с частотой 800/533MHz
- Поддерживает технологию CPU “Hyper-Threading”

Технология “Hyper-Threading” «убеждает» операционную систему в том, что в машине имеется два процессора; это позволяет параллельно обслуживать два процесса, причем каждый из процессов обслуживается отдельным «логическим» процессором в пределах одного физического процессора.

Чипсет

Чипсеты 945PL «Северный мост» (Northbridge, NB) и ICH7 «Южный мост» (Southbridge, SB) построены с использованием инновационной масштабируемой архитектуры, обеспечивающей высокую надежность и производительность.

945PL (NB)

- Поддерживает 32-битную адресацию хоста, обеспечивая для CPU адресацию памяти объемом 2ГБ .
- Интерфейс передачи данных Direct Media point-to-point со скоростью 2 ГБ/с (DMI) к ICH7 (1 ГБ/с) в каждом направлении.
- Имеет один разъем для подключения карты графики PCI Express x16; обеспечивает полную совместимость с PCI Express Base, rev. 1.0a.
- Поддерживает технологии 256-Мб, 512-Мб и 1-Гб DDR2 для устройств x8 и x16
- Поддерживает до четырех слотов небуферизованной памяти DIMM

ICH7 (SB)

- Расширенные функции контроллера DMA, контроллера прерываний, внутреннего таймера
- Совместимость с PCI Express Base, Rev. 1.0a
- Совместимость с PCI 2.3
- Совместимость с Serial ATA II
- Встроенный контроллер хоста USB 2.0 с поддержкой до восьми портов USB 2.0
- Встроенный контроллер LAN
- Встроенный контроллер IDE с поддержкой Ultra ATA100/66/33

Память

- DDR2 533/400 DDR SDRAM с двухканальной архитектурой DDR2
- Обслуживает 2 модуля небуферизованной памяти DIMM
- Обслуживает до 1 ГБ на модуль DIMM (максимально до 2 ГБ памяти)

1394a FireWire (опционально)

- Совместимость с одночипным контроллером хоста для IEEE 1394-1995 и IEEE1394a-2000
- Встроенный 400 Мбит 2-портовый PHY для шины PCI
- Питание 3.3 В при допустимости 5В на входе

Встроенный сетевой адаптер LAN (опционально)

Встроенный сетевой адаптер LAN обладает следующими характеристиками:

- Режим автовыбора 100/10 Mb/s N-way
- Поддержка режимов Half и Full Duplex
- Функция Wake-on-LAN и удаленного пробуждения

- Встроенный трансивер 10/100/1000
- PCI v2.3, 32-бит, 33/66 МГц
- Полная совместимость с IEEE 802.3, IEEE802.3u и IEEE802.3ab

Аудио(опционально)

Данная плата может поддерживать любой из нижеследующих чипсетов аудио.

- Совместимость со спецификацией AC’97 2.3
- Поддерживает 6-канальный аудио CODEC для мультимедиальных компьютерных систем
- Обеспечивает три аналоговых стереовхода с 5-битной регуляцией громкости: Line-in, CD, AUX
- Соответствие требованиям для аудио Microsoft WHQL/WLP 2.0

- Поддерживает 8-канальный DAC в 24/20/16-битном PCM формате для аудио вер. 7.1
- Поддерживает частоту сэмплирования DAC 192K/96K/48K/44.1 КГц
- Электропитание: цифровой режим: 3.3V; аналоговый режим: 3.5V~5.25V
- Соответствует требованиям Microsoft WHQL/WLP 2.0 аудио
- Совместимость с Direct Sound 3D™
- Выход Dolby® Digital Encoder для применения в бытовой электронике

Возможности расширения

Существуют следуюшие опции расширения данной материнской платы:

- Два слота PCI Express для графического интерфейса
- Один слот PCI Express x1
- Три 32-битных слота PCI v2.3
- Один разъем IDE с поддержкой до два устройств IDE
- Один разъем для накопителя на гибких дисках
- Четыре 7-штырьковых разъема SATA

Плата поддерживает захват управления шиной Ultra DMA со скоростью передачи 100/66МБ/с.

Интегрированный вход/выход

Плата снабжена полным набором портов входа/выхода и разъемов:

- Два порта PS/2 для подключения мыши и клавиатуры
- Один серийный порт
- Один параллельный порт
- Четыре порта USB
- Один порт 1394 (опционально)
- Один порт LAN (опционально)
- Гнездо для подключения микрофона, гнезда аудио-входа и выхода

BIOS

Плата работает под AMI BIOS, который позволяет пользователю конфигурировать различные характеристики системы:

- Управление питанием
- Сигналы пробуждения системы
- Параметры CPU
- Время доступа для CPU и памяти

BIOS допускает также установку параметров для различных частот процессора.

Некоторые параметры платы и характеристики ее программного обеспечения могут быть изменены без предварительного уведомления.

Cechy

Procesor

Płyta główna posiada podstawkę typu LGA775, która jest przystosowana do obsługi procesorów Pentium D/Pentium 4/Celeron D i posiada następujące właściwości:

- Obsługuje procesory Intel Pentium D/Pentium 4/Celeron D firmy
- Obsługuje szynę systemowa (FSB) 800/533MHz
- Zabezpiecza technologię CPU “Hyper-Threading”

Technologia “Hyper-Threading” powoduje, że system "myśli”, że posiada dwa procesory i wykonuje równolegle dwa procesy; za wykonanie każdego procesu odpowiedzialny jest jeden z dwuch "logicznych" procesorów w ramach jednego fizycznego procesora

Chipset

Mostek północny (NB) 945PL i mostek południowy (SB) ICH7 chipsetu oparty jest na nowatorskiej i skalowalnej architekturze o sprawdzonej niezawodności i funkcjonalnoœci.

945PL (NB)

- Obsługuje 32-bitowe adresowanie hosta pozwalając procesorowi zaadresować 2 GB pamięci
- Interfejs bezpośredniego połączenia (DMI) typu point-to-point 2 GB/s do ICH7 (1 GB/s) w każdym kierunku
- Obsługuje jedno złącze grafiki PCI Express x16; całkowicie zgodne z technologią PCI Express Base, w wersji 1.0a.
- Obsługuje pamięci 256-Mb, 512-Mb i 1-Gb w technologii DDR2 w urządzeniach x8 i x16
- Obsługuje do czterech niebuforowanych pamięci DIMM

ICH7 (SB)

- Rozszerzony kontroler DMA, kontroler przerywań i funkcje zegara
- Zgodny z technologią PCI Express Base, Rev. 1.0a
- Zgodny z PCI w wersji 2.3
- Zgodny ze standardem Serial ATA II
- Wbudowany kontroler hosta USB 2.0 obsługuje do ośmiu portów USB
- Wbudowany kontroler LAN
- Wbudowany kontroler IDE obsługujący Ultra ATA100/66/33

Pamięć

- DDR2 533/400 DDR SDRAM z architekturą dwukanałową DDR2
- Zaopatrzony w dwa gniazda niebuforowanej pamięci typu DIMM
- Obsługuje pamięć DIMM do pojemności 1 GB każda; maksymalna możliwa pojemność pamięci do 2 GB

1394a FireWire (opcjonalnie)

- Zgodny z kontrolerem pojedynczego chipa IEEE 1394-1995 i IEEE1394a-2000
- Dwa 400 MB złącza PHY zintegrowane z szyną PCI
- Zasilacz -3,3 V z tolerancją wejścia 5 V

Zintegrowana obsługa sieci LAN (opcjonalnie)

Zintegrowana obsługa sieci LAN posiada następujące właściwości:

• Możliwe operacje 100/10 Mb/s N-way Auto-negotiation • Zdolność Half/Full duplex • Obsługuje Wake-on-LAN i zdalne wake-up
• Zintegrowany transceiver LAN 10/100/1000 • 32 bitowa szyna PCI w wersji 2.3, 33/66 MHz • Całkowita zgodność z standardem IEEE 802.3, IEEE802.3u i IEEE802.3ab

Audio (opcjonalnie)

Ta płyta główna obsługuje wszystkie z niżej wymienionych chipsetów audio.

• Zgodne ze specyfikacją AC'97 w wersji 2.3 • Obsługuje 6 kanałów audio CODEC dla komputerowych systemów multimedialnych • Zapewnia trzy wejściowe, analogowe linie stereo z 5 bitową regulacją głośności: Line-in, CD, AUX • Spełnia wymagania stawiane audio przez firmę Microsoft w systemie WHQL/WLP 2.0
• Obsługuje 8 kanałów DAC w formacie 24/20/16-bit PCM w standardzie audio 7.1 • Obsługuje częstotliwości próbkowania 192K/96K/48K/44.1KHz DAC • Zasilacz obsługuje odbiorniki 3.3V cyfrowe i 3.5V~5.25V analogowe • Zgodna ze specyfikacją Microsoft WHQL/WLP 2.0 audio • Zgodny z Direct Sound 3D™ • Wyjście Dolby® Digital Encoder dla zastosowań konsumenckich

Możliwości rozbudowy

Płyta główna wyposażona jest w następujące gniazda:

- Dwa gniazda PCI Express dla kart graficznych
- Jedno gniazdo PCI Express x1
- Trzy 32-bitowych gniazda zgodnych z PCI w wersji 2.3
- Jedno złącza IDE mogące obsłużyć do dwa urządzeń IDE
- Jedno złącze obsługujące stacje dyskietek
- Cztery 7-nóżkowe złącza SATA

Płyta główna obsługuje magistralę Ultra DMA o szybkościach przesyłu 100/66MB/s.

Zintegrowane We/Wy

Płyta główna wyposażona jest w pełny zestaw gniazd i złączy We/Wy:

- Dwa gniazda PS/2 dla myszy i klawiatury
- Jedno gniazdo szeregowe
- Jedno gniazdo równoległe
- Cztery gniazda USB
- Jedno gniazdo 1394 (opcjonalnie)
- Jedno gniazdo LAN (opcjonalnie)
- Gniazdo wejściowe mikrofonowe, gniazdo wejściowe i wyjściowe dzwięku (audio)

Firmowy BIOS

Płyta główna wyposażona jest w BIOS firmy AMI, który pozwala użytkownikowi konfigurować wiele cech systemu włączając w to następujące właściwości:

- Zarządzanie poborem mocy
- Alarmy typu Wake-up
- Parametry pracy procesora
- Ustalenia szybkoœci pracy procesora i pamiêci

BIOS może być używany do ustalania parametrów wpływających na szybkości pracy zegara procesora.

Niektóre parametry dotyczące płyty i jej oprogramowania mogą ulec zmianie bez uprzedniego powiadomienia.

Vlastnosti

Procesor

Tato základní deska používá typ LGA775 Pentium D/Pentium 4/Celeron D, který má následující vlastnosti:

- Určeno pro procesory Intel Pentium D/Pentium 4/Celeron D
- Podporuje taktování systémové sběrnice (FSB) na frekvenci 800/533 MHz
- Podporuje technologii CPU „Hyper-Threading“

Technologie „Hyper-Threading“ umožňuje operačnímu systému pracovat tak, jako by byl připojen ke dvěma procesorům, protože je možné pracovat se dvěma toky programového kódu (vlákny) paralelně najednou, přičemž jsou k dispozici samostatné „logické“ procesory umístěné v rámci jednoho fyzického procesoru.

Čipová sada

Čipy northbridge (NB) 945PL a southbridge (SB) ICH7 jsou založeny na inovativní a škálovatelné architektuře s ověřenou spolehlivostí a výkonností.

945PL (NB)

- Podporuje 32bitové adresování, umožòující CPU pøistupovat k celému adresovému prostoru pamìti 2 GB.
- 2 GB/s přímé rozhraní DMI (Direct Media Interface) pro ICH7 (1 GB/s) v obou směrech.
- Podpora jednoho rozhraní PCI Express x16 pro grafiku, zcela splòující základní požadavky standardu PCI Express, revize 1.0a.
- Podpora 256 Mb, 512 Mb a 1 Gb DDR2 technologií pro zařízení x8 a x16
- Podpora až čtyř DIMM modulů bez vyrovnávací paměti

ICH7 (SB)

- Vylepšený řadič DMA, řadič přerušení a funkcí časovače
- Splňuje základní požadavky standardu PCI Express, revize 1.0a
- Splňuje požadavky standardu PCI 2.3
- Splňuje požadavky standardu Serial ATA II
- Integrované hostitelské řadiče USB 2.0 podporující až osm portů
- Integrovaný řadič LAN
- Integrovaný řadič IDE podporující Ultra ATA100/66/33

Paměť

- Paměti DDR2 533/400 DDR SDRAM s dvoukanálovou architekturou DDR2
- Instalovat je možné až dva DIMM moduly bez vyrovnávací pamìti
- Až 1 GB pamìti na jeden modul DIMM s maximální velikostí pamìti do 2 GB

1394a FireWire (volitelné)

- Shoda se standardem jednočipového řadiče IEEE 1394-1995 a IEEE1394a-2000
- 2 integrované porty 400 Mbit PHY pro sběrnici PCI
- Podporuje napájení 3,3 V s tolerancí vstupu 5 V

Vestavění síťové rozhraní LAN (volitelně)

Vestavěné síťové rozhraní LAN nabízí následující možnosti:

• 100/10 Mb/s Ncestné automatické přepínání provozu • Podpora plného/polovičního duplexního provozu • Podpora funkce Wake–on–LAN a vzdálené aktivace
• Integrovaný přijímač/vysílač 10/100/1000 • Sběrnice PCI v2.3, 32bitová, 33/66 MHz • Shoda podle norem IEEE 802.3, IEEE802.3u a IEEE802.3ab

Zvuk (volitelně)

Tato základní deska může podporovat libovolnou zvukovou čipovou sadu.

• Splňuje požadavky standardu AC'97 2.3 • Podpora 6kanálového zvukového kodeku určeného pro multimediální PC systémy • Nabízí tři analogové linkové stereo vstupy s 5bitovým řízení hlasitosti: LINE-IN, CD, AUX • Splňuje požadavky pro audio zařízení Microsoft WHQL/WLP 2.0
• 8 kanálů převodníku DAC podporuje 24/20/16bitový formát PCM pro zvukový výstup 7.1 • Podpora vzorkovací frekvence převodníku DAC 192k/96k/48k/44,1kHz • Podpora napájení: Digitální: 3,3 V; Analogové: 3,5 V ~ 5,25 V • Splňuje požadavky na audio zařízení Microsoft WHQL/WLP 2.0 • Kompatibilita s Direct Sound 3D™ • Výstup digitálního enkodéru Dolby® pro použití s elektronickými zařízeními uživatele

Možnosti rozšíření

Základní deska je dodávána s následujícími možnostmi rozšíření

- Dvě patice PCI Express pro grafickou kartu
- Jedna patice PCI Express x1
- Tři 32bitové patice PCI v2.3
- Jeden konektor IDE podporující až dvou zařízení IDE
- Jedno rozhraní pro disketovou mechaniku
- Čtyři 7kolíkové konektory SATA

Tato základní deska podporuje řízení sběrnice Ultra DMA s přenosovými rychlostmi 100/66 MB/s.

Integrovaný vstup/výstup

Základní deska je vybavena kompletní sadou vstupních portů a konektorů I/O:

- Dva porty PS/2 pro myš a klávesnici
- Jeden sériový port
- Jeden paralelní port
- Čtyři porty USB
- Jeden port 1394 (volitelně)
- Jeden port LAN (volitelně)
- Zvukové konektory pro mikrofon, zvukový vstup a výstup

Česky

Firmware BIOS

Základní deska využívá BIOS formy AMI, který uživateli umožňuje nakonfigurovat mnoho systémových parametrů, včetně následujících:

- Řízení spotřeby
- Alarmy při spouštění systému
- Parametry CPU
- Časování CPU a paměti

Firmware může být rovněž použit k nastavení parametrů pro různé taktovací frekvence procesoru.

Některé technické parametry hardware a software se mohou měnit bez předchozího upozornění.

Caracteristici

Procesorul

Placa de bază utilizează Pentium D/Pentium 4/Celeron D de tip LGA775 cu următoarele caracteristici:

- Funcționează cu procesoare Intel Pentium D/Pentium 4/Celeron D
- Funcționează cu bus sistem (FSB) de 800/533 MHz
- Este compatibilă cu unități centrale dotate cu tehnologia „Hyper-Threading”

Tehnologia „Hyper-Threading” permite sistemului de operare să funcționeze ca şi cum ar exista două procesoare, putând fi rulate în paralel două fire, fiecare pe câte un procesor „logic” separat, aflate pe acelaşi procesor fizic.

Setul de chipuri

Seturile de chipuri 945PL Northbridge (NB) şi ICH7 Southbridge (SB) se bazează pe o arhitectură inovatoare şi scalabilă, care s-a impus deja prin fiabilitate şi performanță.

945PL (NB)

- Sprijină adresarea host bus (bus gazdă) de 32 biți, permițând unității centrale să acceseze întreaga cantitate de memorie de 2 GB.
- Interfață Direct Media (DMI) punct la punct pe 2 GB/s pentru ICH7 (1 GB/s) în ambele direcții.
- Sprijină PCI Express de 16x pentru interfața grafică, este pe deplin compatibil cu versiunea 1.0a a specificației de bază PCI Express.
- Este compatibil cu tehnologiile de 256-Mb, 512-Mb şi 1-Gb DDR2, pentru unități de viteza 8x sau 16x
- Suportă cel mult patru unitații de memorie DIMM fără zonă tampon

ICH7 (SB)

- Controler DMA îmbunătățit, controler de întreruperi şi funcții de temporizare
- Compatibil cu specificația de bază PCI Express, versiunea 1.0a
- Compatibil cu specificația PCI 2.3
- Compatibil cu specificație Serial ATA II
- Controler gazdă USB 2.0 integrat, care suportă cel mult opt porturi USB 2.0
- Controler LAN integrat
- Controler IDE integrat, suportând Ultra ATA100/66/33

Memoria

- Module DDR SDRAM DDR2 533/400 cu arhitectură DDR2 cu canal dual
- Poate funcționa cu două module DIMM fără zonă tampon
- Poate funcționa cu module DIMM de cel mult 1 GB, iar cantitatea maximă de memorie este de 2 GB

1394a Fire Wire (opțional)

- compatibil cu un host controller cu un singur chip pentru IEEE 1394-1995 şi IEEE1394a-2000
- 400 Mbit 2-Port PHY integrat pentru PCI Bus
- sursă de alimentare 3.3V cu input de 5V toleranță

Onboard LAN (opţional)

Onboard LAN are următoarele caracteristici:

- Operare100/10 Mb/s N-way Auto-negotiation
- Suportă modul de operare duplex total/semi-duplex
- Suport pentru funcţiile Wake-on-LAN şi trezire la distanţă

- Unitate de emisie/recepţie 10/100/1000 integrat
- PCI v2.3, 32-bit, 33/66 MHz
- Complet comaptibil cu IEEE 802.3, IEEE802.3u şi IEEE802.3ab

Audio (opţional)

Această placă de bază suportă toate seturile de chipuri de mai jos.

- Compatibil cu specificaţia AC'97 2.3
- Suportă CODEC cu şase canale audio destinate sistemelor multimedia ale calculatoarelor
- Oferă trei intrări audio analoge stereo, cu un control al volumului sonor de 5 biţi: Intrare audio, CD, AUX
- Corespunde cerinţelor audio Microsoft WHQL/WLP 2.0

- Suport DAC 8 canale format PCM 24/20/16-bit pentru soluţii audio 7.1
- Suport 192K/96K/48K/44.1KHz DAC sample rate
- Suport curent: Digital: 3.3V; Analog: 3.5V~5.25V
- Compatibilă cu specificaţiile audio Microsoft WHQL/WLP 2.0
- Compatibil cu Direct Sound 3D™
- Ieşire Dolby® Digital Encoder pentru aplicaţiile electronice ale clientului

Opţiuni de extindere

Placa de bază este dotată următoarele posibilităţi de extindere:

- Două sloturi PCI Express pentru interfaţa grafică
- Un slot PCI Express x1
- Trei sloturi de 32 biţi compatibile PCI, versiunea 2.3
- O conectoar IDE care suport cel mult două instrumente IDE
- O interfaţă pentru unitate floppy
- Patru conectoare SATA 7

Această placă de bază suportă Ultra DMA bus mastering cu viteza de transfer de 100/66MB/s.

I/O integrată

Placa de bază este dotată cu un set complet de porturi şi conectoare I/O:

- Două porturi PS/2, pentru mouse şi tastatură
- Un port serial
- Un port paralel
- Patru porturi USB
- Un port 1394 (opţional)
- Un port LAN (opţional)
- Mufe audio pentru microfon, intrare şi ieşire audio

Firmware BIOS

Placa de bază utilizează AMI BIOS, care permite utilizatorului să configureze mai mulţi parametri ai sistemului, cum ar fi:

- Gestionarea energiei
- Alarme de trezire
- Parametri CPU
- Temporizare CPU şi memorie

Acest firmware poate fi utilizat şi pentru a seta parametrii diferitelor frecvenţe de comandă ale procesorului.

Anumite specificaţii hardware şi elemente de software pot fi modificate fără înştiinţare prealabilă.

Спецификация

Процесор

Тази дънна платка използва сокет LGA775 за процесори Pentium D/Pentium 4/Celeron D и поддържа следните спецификации:

- поддръжка на процесори Intel Pentium D/Pentium 4/Celeron D
- поддръжка на системна шина със скорост 800/533MHz
- поддръжка на процесори с технология "Hyper-Threading"

Технологията "Hyper-Threading" позволява да се "излъже" операционната система, че работи на два процесора, което дава възможност за паралелното изпълнение на две задачи на два отделни "логически" процесора в един и същ физически процесор.

Чипсет

Чипсетът със северен мост 945PL (NB) и южен мост ICH7 (SB) е изграден на базата на оригинална архитектура с възможност за надстройка с доказана надеждност и производителност.

945PL (NB)

- 32-bit адресация на шината, което позволява на процесора достъп към пълното адресно пространство на паметта 2GB.
- Директен медия интерфейс (DMI) 2 GB/s point-to-point към ICH7, (1 GB/s във всяка посока).
- поддръжка на шина PCI Express x16 за графичен интерфейс, напълно съвместима с шината PCI Express Base ревизия 1.0a.
- поддръжка на технологии 256-Mb, 512-Mb и 1-Gb DDR2 за x8 и x16 устройства
- поддръжка на до четири небуферирани DIMM слота.

ICH7 (SB)

- подобрен DMA Контролер, контролер на прекъсванията и часовник
- поддръжка на шината PCI Express Base, ревизия 1.0a
- поддръжка на шината PCI 2.3
- съвместимост със спецификацията Serial ATA II
- интегриран контролер USB 2.0 с поддръжка на до осем порта USB 2.0
- интегриран мрежов контролер
- интегриран контролер IDE с поддръжка на Ultra ATA100/66/33

Памет

- Дву-канална DDR2 архитектура на паметта DDR2 533/400 DDR SDRAM
- поддръжка на до два небуферирани DIMM слота
- до 1 GB памет на 1 DIMM канал с максимален капацитет 2 GB

1394a FireWire контролер (опция)

- host контролер на един чип за поддръжка на интерфейси IEEE 1394-1995 и IEEE1394a-2000
- Интегриран 400-мегабитов PHY интерфейс с два порт за PCI шината
- Захранване 3.3V с толеранс 5V

Интегриран мрежов контролер (опция)

Интегриран LAN контролер със следните характеристики:

- режими на работа 100/10 Mb/s N-way с автоматично съгласуване
- Поддръжка на режими half/full duplex
- поддръжка на функция за “събуждане” Wake-On-LAN и дистанционен wake-up

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- Интегриран трансивер 10/100/1000
- PCI v2.3, 32-bit, 33/66 MHz
- Пълна съвместимост с IEEE 802.3, IEEE802.3u и IEEE802.3ab

Аудио (опция)

Тази дънна платка може да поддържа един от следните видове аудио чипсети

- Аудио съвместим с AC’97 v2.3
- Поддръжка на 6-канален аудио кодек за мултимедийни компютърни системи
- Три аналогови линейни стерео входа с 5-битов контрол на силата на звука: Line-in, CD, AUX
- Съответствие с изискванията на Microsoft WHQL/WLP 2.0

- 8-канален цифрово-аналогов преобразовател с поддръжка на 24/20/16-bit PCM формат за 7.1 канален звук.
- Поддръжка на честота 192K/96K/48K/44.1KHz
- Захранване: цифрово: 3.3V; аналогово: 3.5V~5.25V
- аудио - съвместимо с спецификацията Microsoft WHQL/WLP 2.0
- съвместимост с Direct Sound 3D™
- Изход с вграден Dolby® Digital Encoder за връзка с домашни аудио/видео уреди.

Възможности за разширяване

Дънната платка има следните разширителни възможности:

- Два слота PCI Express за графичен интерфейс
- Един слот PCI Express x1
- три слота 32-bit PCI v2.3
- Един IDE конектор с поддръжка до два IDE устройства
- един конектор за флопидисково устройство
- четири 7-pin SATA конектора

Дънната платка поддържа шина Ultra DMA 100/66MB/s.

Интегриран Вход/Изход контролер

Дънната платка има пълен набор от I/O портове и конектори:

- два PS/2 порта за мишка и клавиатура
- един сериен порт
- един паралелен порт
- четири USB порта
- един 1394 порт (опция)
- един LAN порт (опция)
- Аудио жакове за микрофон, линеен вход и линеен изход

BIOS Firmware

Дънната платка използва AMI BIOS с възможност за различни системни настройки, включително

- управление на захранването
- Wake-up аларми
- параметри на процесора
- синхронизиране на процесора и паметта

настройка на скоростта на часовника на процесора

Хардуерните и софтуерни спецификации и параметри могат да бъдат изменени без предупреждение.

Jellemző

Processzor

Az alaplap LGA775 típusú Pentium D/Pentium 4/Celeron D processzort használ, a következő tulajdonságokkal:

- Intel Pentium D/Pentium 4/Celeron D processzorokkal működik
- 800/533 MHz sebességű rendszerbuszt (FSB) támogat
- Támogatja a „Hyper-Threading” technológiát használó központi egységeket

A „Hyper-Threading” technológia által az operációs rendszer úgy működik, mintha két processzorral rendelkezne, ami két szál párhuzamos futását teszi lehetővé két független, ugyanazon fizikai processzoron található „logikai” processzoron.

Lapkakészlet

A 945PL Northbridge (NB) és ICH7 Southbridge (SB) lapkakészletek egy új és méretezhető, nagy megbízhatóságú és teljesítőképességű architektúrára épülnek.

945PL (NB)

- 32 bites host bus addressing-et (gazdabusz címzést) tesz lehetővé, ami által a központi egység a teljes 2 GB-os címzési tárhelyhez hozzáfér.
- 2 GB/s pontról-pontra adatátvitelű Direct Media interfész (DMI) az ICH7 (1 GB/s) számára mindkét irányban.
- Egy 16-szoros Express PCI-vel rendelkezik a grafikus interfész számára, amely teljesen kompatibilis a PCI Express alapspecifikáció 1.0a változatával.
- 256 Mb-os, 512 Mb-os és 1 Gb-os DDR2 technológiát támogat 8- és 16-szoros eszközök esetében
- Akár négy puffermentes DIMM egységgel képes működni

ICH7 (SB)

- Fejlett DMA vezérlő, megszakításvezérlő és időzítő funkciók
- Kompatibilis a PCI Express alapspecifikáció 1.0a változatával
- Kompatibilis a PCI 2.3-as specifikációjával
- Kompatibilis a soros ATA II specifikációval
- Beépített USB 2.0 gazda vezérlő, legtöbb nyolc USB 2.0 portot támogat
- Beépített LAN vezérlő
- Beépített IDE vezérlő, amely az Ultra ATA100/66/33 technológiát támogatja

Memória

- DDR2 533/400 DDR SDRAM modulok kétcsatornás DDR2 kiépítésben
- Két puffermentes DIMM egységgel működik
- Maximum 1 GB-os DIMM egységeket támogat, maximális memória 2 GB

1394a FireWire (opcionális)

- Megfelel az egy csipes host vezérlőnek, az IEEE 1394-1995 és IEEE1394a-2000 specifikációknak
- Integrált 400 Mbit 2-Port PHY a PCI buszhoz
- 3.3V áramforrás 5V toleráns beadással

Alaplapon levő LAN (választható)

Ez az alaplap a következő LAN lapkakészletek bármelyikét támogatja.

• 100/10 Mb/s N-útú Auto-negotiation operáció • Fél-/teljes duplex • A Wake-on-LAN és a távoli ébresztés funkciók támogatása
• Beépített 10/100/1000 adó-vevõ • PCI v2.3, 32-bit, 33/66 MHz • Teljesen megfelel az IEEE802.3, IEEE802.3u és IEEE802.3ab szabványoknak

Audio (opcionális)

Ez az alaplap a következő Audio lapkakészletek bármelyikét támogatja.

• Megfelel az AC'97 2.3-as specifikációnak • A számítógép multimédiás rendszereinek szánt hat csatornás audio CODEC-et támogat • Három analóg sztereo bemenetet biztosít 5 bites hangerő vezérléssel: bemenet, CD, AUX • Megfelel a Microsoft WHQL/WLP 2.0 audio követelményeine
• 8 csatornás DAC támogatás 24/20/16-bit PCM formátum 7.1 hangberendezésre • 192K/96K/48K/44.1KHz DAC sample rate támogatással • Áramellátás: Digitális: 3.3V; Analóg: 3.5V~5.25V • Megfelel a Microsoft WHQL/WLP 2.0 audio követelményeinek • Kompatibilis a Direct Sound 3D™ technológiával • Dolby® Digital Encoder digitális kóder kimenet a vevő elektromos alkalmazásaihoz

Bővítési lehetőségek

Az alaplap a következő bővítési lehetőségekkel rendelkezik:

- Két PCI Express foglalat a grafikus interfész számára
- Egy 1-szeres PCI Express foglalat
- Három 32 bites, a PCI 2.3-as változatával kompatibilis foglalat
- Egy IDE csatlakozó, amely összesen két IDE eszközt támogat
- Egy hajlékonylemez meghajtó interfész
- Négy 7 tűs SATA csatlakozó

Ez az alaplap a 100/66 MB/s átviteli sebességű Ultra DMA 'bus mastering' megoldást is támogatja.

Beépített I/O

Az alaplapot az I/O portok és csatlakozók teljes készletével szerelték fel:

- Két PS/2 port az egér és a billentyűzet számára
- Egy soros port
- Egy párhuzamos port
- Négy USB port
- Egy 1394 port (választható)
- Egy LAN port (választható)
- Audio csatlakozók mikrofon, bemenet és kimenet számára

BIOS Firmware

Az alaplapon levő AMI BIOS segítségével a felhasználó a rendszer sok paraméterét állíthatja be, például:

- Energiagazdálkodás
- Ébresztési riasztások
- CPU paraméterek
- CPU és memória időzítés

A firmware segítségével a processzor órajel-frekvenciáinak paramétereit is beállíthatják.

Bizonyos hardverjellemzők és szoftverelemek előzetes bejelentés nélkül módosulhatnak.